Loss and Fragmentation of Farmland

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> **"The state is like a tree. The roots are agriculture, the trunk is the population, the branches are industry, the leaves are commerce and the arts; it is from the roots that the tree draws the nourishing ways … and it is to the roots that a remedy must be applied if the tree is not to perish."**
>
> **Victor, Marquis de Mirabeau**
> **Early Eighteenth Century**

Executive Summary

As in other jurisdictions, early settlement in Alberta occurred in areas with the best soils. Trade centers were established close by. Many of these trade centers have continued to grow into today's cities and towns, and a few are now putting significant development pressure on Alberta's prime farm and ranch lands. These pressures have given rise to increasing concerns about land use and farmland protection.

The report provides data on subdivision and Intensive Livestock Operation (ILO) development applications and approvals, for 1997 and 1998, collected from more than 60 rural municipalities across Alberta. The Municipal Development Plans and Land Use Bylaws for these municipalities were also scanned for policies related to agricultural lands. The report also identifies and assesses a wide range of policies or "tools" used to minimize the loss and fragmentation of farmland and open spaces across North America. It provides some ideas for alternate approaches that the province, local governments and the private sector might consider in responding to current land use concerns in Alberta.

There appear to be three major recurring concerns about land use and farmland protection: (1) conversion of farmland to other uses, (2) fragmentation of the farmland base and (3) right to farm. The three are inter-related. Fragmentation and right to farm usually coincide, but if fragmentation of agricultural land is occurring in a community with a low-density population, it is unlikely that land use conflicts will arise. However, in more densely populated areas, a similar degree of fragmentation often results in a greater number of land use conflicts.

Conversion of Farmland - Over the last 25 years, the province has lost a very small percentage of farmland on a net basis, after land brought into production is accounted for (less than one tenth of a percent per five-year reporting period)[1]. However, much of the agricultural land converted to other uses during that time period was of high capability for annual cropping and horticultural crops. Conversely, most of the land that has come into production has been of a lower quality, better suited to forage and pasture production.

Fragmentation of Farmland - Around many urban centers, residential and commercial development has fragmented the farmland base, resulting in land prices that have increased beyond agricultural productivity values. First parcels subdivided from quarter sections of land can also lead to fragmentation. Some municipalities now permit more than one parcel to be subdivided from a quarter.

Although the subdivision of a "first parcel out" from a quarter section of land is no longer mandatory under provincial legislation, some municipalities still grant subdivisions as if it were. Allowing first parcels out sets a precedent for successive and adjacent landowners to follow or demand.

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[1] Agricultural Land Base Monitoring Report (1991-1995). Policy Secretariat, Alberta Agriculture, Food and Rural Development.

The corridors between Edmonton to Calgary, and Calgary to Canmore, is the most active growth area and has experienced the highest increases in land value.[2] Demand for land is strong and the real estate market is active. Employment opportunities and the relocation of people from within Alberta and outside the province have driven the demand for land.

Rising land prices and limited expansion and development opportunities make it increasingly attractive for farmers and ranchers in the corridors to sell part or all of their land for residential or commercial development, especially when they near retirement age. The option to subdivide or sell a portion of their land is considered a right that many in the farm community would oppose if the option were removed. In fragmented areas, country residential development has made it difficult, and sometimes dangerous, to perform daily farming operations such as moving farm equipment or cattle along local roads. Farmers have to contend with an increased volume and higher speed traffic, as well as nuisance complaints from neighbours who object to the smells, noise, dust, etc. that are part of normal farming operations.

Right to Farm – Key factors that influence loss and fragmentation of the farmland base include (1) the health of the farm economy, (2) shifting demographics, (3) population growth, (4) lack of understanding of normal farm operations, (5) increasing land values, and (6) municipal policies and decision making. As a result, producers in these areas expect the Province to develop legislation that protects them from nuisance lawsuits and allows them, with minimal restrictions, to raise any crop or livestock on their land which is a legitimate agricultural activity. Right to Farm concerns are also frequently raised by producers outside of the two main corridors when they run into opposition to changing their farming operations.

Population growth and the resulting urban sprawl is a key factor contributing to loss and fragmentation of the farmland base. Since 1951, Alberta's total population has tripled, from 940,000 to approximately 3 million residents. Most of that growth has occurred in urban areas. Rural farm populations have steadily declined to where there are now only about half the number of people living on farms compared to 1951[3]. Technological advances that allow people to telecommute to their places of business may reverse this trend to some extent in the future, however, the province's major urban centers will continue to expand onto adjoining farm and ranch lands.

In rural municipalities bordering major urban centers, there is a concern that the agricultural voice is being overshadowed in municipal council chambers. Producers have expressed concern that many acreage owners, without a farming background, or little understanding of general farming practices are sitting on municipal councils and are making decisions affecting farming operations.

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[2] FCC, Farmland Values, Spring 2000.

[3] Statistics Canada, Census of Agriculture, 1951 – 1996.

Municipal councils face difficult choices when it comes to making land use decisions. Many municipalities have seen their revenue base decrease in recent years. Councilors realize that they cannot rely on tax revenue from farmland to cover municipal operating costs, so there is added pressure to accommodate other industrial and commercial activities and to allow more country residential (CR) development. U.S. studies have shown that residents in CR developments come to expect, and often receive, urban-level services and that it costs between US $1.05 to US $1.67 to provide ongoing services to rural residential developments for every dollar collected in tax revenues. This compares to a cost of US $.21 to US $.75 to service farmland.[4]

Alberta has "right-to-farm legislation". The *Agriculture Operation Practices Act* (AOPA) is designed to protect Alberta farmers and ranchers from nuisance claims. The AOPA can impact the land use activities of municipalities in several ways. Nuisance claims cannot be brought against agricultural operations following generally accepted practices, the land use bylaws of the municipality and any provincial regulations. The liability protection continues to apply even if the municipal land use bylaw changes, the land switches ownership, someone else takes over the farming operation, or adjacent land use changes.

In 1994, the new Municipal Government Act abolished Regional Planning Commissions and transferred the responsibility for protecting agricultural land to municipalities. In 1996, the province developed a set of Provincial Land Use Policies (PLUP) to guide municipalities in their land use decisions. Section 6.1 of the PLUPs specifies that municipalities are encouraged to:

1. identify, in consultation with Alberta Agriculture, Food and Rural Development (AAFRD), areas where agricultural activities (including intensive and extensive agricultural and associated activities) should be the primary land use;
2. limit the fragmentation of agricultural lands and their premature conversion to other uses, especially within the agricultural areas identified in accordance with policy #1;
3. direct non-agricultural development to areas where such development will not constrain agricultural activities;
4. minimize conflicts between intensive agricultural operations and incompatible land uses through the use of reciprocal setback distances (i.e. the Minimum Distance Separation method from the Code of Practice for the Safe and Economic Handling of Animal Manures) and other mitigative measures.

Review of Municipal Development Plans (MDPs) and Land Use Bylaws (LUBs) indicates that all rural municipalities include the protection of agriculture and agricultural land as a fundamental goal. However, rural municipalities also accommodate other land uses on what has traditionally been agricultural land. Basic reasons are to provide lifestyle choices, diversify the municipalities' economic base, and to recognize site requirements of certain non-agricultural land uses (eg. farmstead separations). Whether the objectives of the municipal plans are being met depends on how policies are interpreted and put into practice through the actions of the planning and approving authorities, municipal councils and appeal boards.

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[4] Summary of 63 cost of Community Services (COCs) Studies across the U.S., since 1986. American Farmland Trust, Washington, D.C. December 6, 1999 Press Release.

Rural Municipalities were surveyed in the four Agricultural Regions of Alberta. Highest development pressures occurred in municipalities within the central corridor along highway 2 between Edmonton and Calgary. These municipalities tended to have a greater number of farms, of smaller size, in an area with relatively higher urban and rural populations. From the survey, planners identified country residential developments as the biggest pressure facing agriculture and its land base. Sixty percent of the municipalities in the South and Central regions felt country residential development was exerting the greatest pressure on agricultural land. The survey results indicated that municipalities that are facing higher development pressures have experienced two to ten times greater total subdivision activity and greater conversion of agricultural land to non-agriculture developments than municipalities with less development pressure. Past fragmentation also appears to be higher in these municipalities. On average, over half of the agricultural land converted was better quality land.

At the provincial level, first parcel out subdivisions accounted for 70% of the subdivision activity on agricultural land. More than 70% occurred on better quality land (typically through farmstead separations). The primary concern is that these subdivided parcels are the first step in fragmentation of the land base, since they are often sold to non-family members for country residential use. The study also examined the allowance of more than one parcel subdivided per quarter section of agricultural land. Subdivision of multi-lot parcels tends to occur more frequently in municipalities with higher development pressures. Approximately 30% of agricultural land conversion has occurred through second, third or more parcels subdivided from quarter sections of land. Of this, 33% of the multi-lot subdivisions occurred on better quality agricultural land. Foothills, Pincher Creek and Ranchland have stopped first parcel out practices, to limit the amount of fragmentation occurring in their rural areas.

On average, only 3.5% of subdivision rulings were appealed across the four agricultural regions. However, 72% percent of subdivision applications that went to appeal were approved. In some cases, where the municipal subdivision authority had followed municipal policies and bylaws, the subdivision appeal board overturned those decisions.

Survey respondents reported that intensive livestock operations (ILOs) were the farming activity most limited by high development pressures, particularly along the central corridor. Municipalities facing higher development pressure have a three to five times more development permit applications than those with less development pressure. Of the 471 ILO development permits applied for over the 1997-1998 sampling period, 446 were approved after appeals. Most municipalities based their decisions on the 1995 Code of Practice. Two thirds of the appeals on initially approved ILOs were denied. The Appeal Boards appeared to support the municipal councils' original decisions. Of those that appealed approved ILO permits, half came from neighboring farms or other intensive operations.

When faced with greater development pressure, some municipalities appear to lack the resources to address the issues at hand. Many development officers commented that the resources and tools are not in place to address the bigger picture, longer-term planning perspectives that are required today.

The two most common tools for protecting farmland and farm operations in North America are preferential assessment of farmland and Right to Farm legislation. For farmland protection, preferential property tax assessment may work in conjunction with other initiatives, but as a stand-alone tool it has been found to be ineffective.

Right to Farm laws are in place in every state and all but one province. The general goal of Right to Farm law in both Canada and the U.S. is to protect farmers from common-law nuisance actions. In the last few years, several states have amended their legislation or enacted a separate law, to protect farmers from restrictive municipal bylaws. Some states have coupled their right to farm legislation with the creation of agricultural districts or zones, giving greater protection to farms located within areas designated for agriculture. Some areas have also developed local Right to Farm ordinances to further protect farming operations.

While right to farm legislation and preferential tax assessments are tools that have their place, the literature clearly shows they need to be part of a broader, more comprehensive approach to be able to effectively protect farmland. Other common approaches enacted at the state/provincial and local level include agricultural zoning or agricultural districting, cluster zoning, purchase of agricultural conservation easements (PACE), tradable development rights, urban growth boundaries, and more comprehensive planning.

Most states have added to their "toolkit" in recent years and now do more comprehensive planning. Many states and local governments have policies that allow for the establishment of agricultural zones or agricultural districting, the purchase or transfer of development rights, and so on. Most have attempted to use voluntary approaches and incentives, while a few jurisdictions in the U.S. and Canada, such as Oregon, Washington, B.C. and Quebec, have chosen a more top-down, mandatory approach that includes the delineation of agricultural zones, urban growth boundaries and other tools which must be used by county and local governments.

Several jurisdictions in the U.S. have worked hard to bring the state, local governments and the private sector (including developers) to the table to discuss issues and to plan for the future. They are also tapping into a wide range of funding sources to accomplish their goals.

Options to Protect Farmland

The success of farmland protection programs depends on many factors. In the U.S., strategies that provide financial alternatives to selling farmland for development have usually been most successful. The American Farmland Trust, a nation-wide, not-for-profit agency working on the issue of farmland preservation for many years now, believes there are four fundamentals to creating growth strategies that benefit farmers, urban dwellers and suburban residents:

1. Communities must envision their futures and plan comprehensively to make that vision a reality. A good strategic framework should include planning that balances all interests - agriculture along with urban redevelopment, suburban transportation and other challenges associated with growth;
2. Subsidies which support sprawl over preserving top quality farmland must be eliminated;
3. Since farms and ranches 'produce' scenic vistas, open space, wildlife habitat and watershed integrity, and often serve as buffers around parks, the support of private landowners must be enlisted to help create land conservation and smart growth strategies;
4. All levels of government must support and commit themselves to the protection and preservation of farmland and open spaces.

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1.0 Background and Introduction

The agriculture and the agri-food industry provide significant benefits to the Alberta economy. Not only is agriculture the lifeblood of much of rural Alberta, it is a major contributor to the provincial economy. In 1998, it contributed $4.1 billion (eighth place ranking among all the sectors) to Alberta's gross domestic product. One in three Albertans are now employed in the primary, processing and food and beverage sectors.[5]

If our generation and the next are to continue to develop the agri-food industry, an adequate agricultural land base will be required. At the current rate of loss and fragmentation of farmland, this may not be possible. Recent challenges in trying to find locally acceptable sites for new intensive livestock operations, the loss of prime agricultural land and the conflicts between rural and urban neighbors that occur as a result of urban sprawl, have heightened concern about the future of agriculture in Alberta.[6]

Of the 8,000 calls that the Farmers Advocate's office in Alberta receives each year, approximately 2000 are complaints arising from incompatible land uses in rural communities. Much of the concern is with land use conflicts that have resulted from conversion of farm and ranchland to urban and country residential development. However, farmers are increasingly complaining about other farmers. The complaints often involve opposition to odors, noise, and other perceived nuisances from farm neighbors.

In 1995, market signals that followed the demise of the Grain Transportation Authority (commonly known as the Crow Benefit) provided opportunities for farmers and other investors in Alberta to expand existing livestock operations and to develop new value-added/agri-food processing businesses. However, because of past and present land use and land allocation decisions it has now become difficult to find suitable locations for these businesses. Much of the difficulty stems from fragmented land use patterns.

Alberta is not unique. Many other jurisdictions in North America face similar challenges. The situation is exacerbated as population and development pressure increases.

The objectives of this report are to:

1. provide an assessment of the current situation in Alberta, based on collected and analyzed subdivision data, along with results from a survey of planning officials in rural municipalities in Alberta;

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[5] Economic Production and Statistics Branch, Alberta Agriculture Food and Rural Development 1999

[6] These concerns were apparent from results of Ag Summit 2000, a 5-month public consultation process Initiated by the Honourable Ty Lund, Minister of Agriculture, Food and Rural Development. The purpose of Ag Summit 2000 was to allow stakeholders to identify challenges and opportunities within the agriculture and agri-food sector in Alberta.

2. provide an overview of what other provinces, states and local governments have been doing in response to growing concerns about the loss and fragmentation of farmland and open spaces; and
3. stimulate some thought and discussion among Albertans about what needs to be done to address regional and local issues.

1.1 Current Situation and Concerns About Loss and Fragmentation of Farmland in Alberta

Alberta is a geographic area with abundant resources, including oil and gas, timber, minerals, wildlife, water and soil. These resources have been a major contributor to the economic growth that has occurred here over the past 100+ years. According to most predictions, Alberta is positioned to have one of the fastest rates of growth in Canada over the next few years. While some may view this as good news, it will also continue to put more pressure on the agricultural land base and those who make their living from the land.

While urban sprawl has resulted in loss of some of the province's most productive farm and ranch lands, fragmentation of the land base is probably the more significant problem for the agri-food industry. As the economy continues to grow and the purchasing power of Albertans increases, there will be more people who can afford to move to the country to escape the congestion of the city and suburbia. Unless some changes are made to the way in which land use decisions are made the result will be ongoing fragmentation.

In areas of the province where the land base has become very fragmented as a result of country residential and other forms of development, farmers and ranchers are finding that it is now difficult, and sometimes dangerous, to perform daily operations. They must contend with increased and higher speed traffic that makes it almost impossible to move farm equipment or cattle along local roads. They are also faced with nuisance complaints from neighbors who object to the smells, noise, dust, etc. that generally go along with farming and ranching operations.

An article in the *Canadian Geographer* nearly twenty years ago referred to this situation as the structural disintegration of agriculture in urbanizing regions.[7] It said that:

> "planning statutes, by design, emphasize the importance of orderly urban growth and the efficient allocation of urban infrastructure. Protection of agricultural lands is addressed within the context of urban needs, an arrangement that can have a chilling effect on land protection policies."

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[7] Owen J. Furuseth and J. T. Pierce; A Comparative Analysis of Farmland Preservation Programmes in North America. Canadian Geographer; XXXVI, 3, 1982

Perhaps the Alberta Cattle Commission summed up the problems best in its January 1998 submission to the local planning authorities:

> "a major problem facing many agricultural producers, especially around urban centers, is the impact of conflicting land demands on agricultural land values". In many cases, prices being paid for agricultural land are significantly higher than the returns that agricultural production can justify. Gradually this situation forces agricultural land out of production. While this is not a problem that can be addressed directly by local planning authorities, it is influenced by the degree of certainty built into land use decisions. Where land use bylaws guarantee that land zoned for agriculture will stay in agriculture, there is less likelihood that land prices will be influenced by speculation."

The Commission went on to suggest that "land zoning provisions established to protect agricultural land need to be clear and unequivocal and not subject to changes in interpretation."

1.2 Factors That Influence Loss and Fragmentation

Statistics Canada figures show that, nationally, 6.5 million acres of agriculture land were lost to other uses between 1951 and 1986. Between 1966 and 1981, 57% of all rural land converted to urban uses was prime farmland (Canada Land Inventory Class I to III). In the ten years between 1986 and 1996, Canada has lost millions of acres of agricultural land to other uses.

Many factors influence loss and fragmentation of Canada's agricultural land base. The health of the farm economy is a major contributor to farmland conversion. When commodity prices are low and input costs are high, it often makes better economic sense to farmers near major urban and recreation centers to sell their land to developers rather than to leave it in agricultural production. With the current average age of farmers at 48.3 years, many are nearing retirement. If there are no family members who want to take over the farm, then there is an increased likelihood that if the land is close to a major urban center, it will be sold to a developer.

A critical mass of agricultural land is generally required in order to sustain agricultural support services (equipment dealers, feedmills, etc.) in a rural area. As these support services disappear, an "impermanence syndrome" develops in the area. Over time, farmers who see neighboring farms being developed may expect that they too will eventually sell their land for development, so they stop investing in their own farms.

Government policies can also contribute to loss and fragmentation. Improved transportation networks make commuting easier than in the past. Many rural municipalities now provide a level of services that enable people to live as comfortably in rural areas as in towns. In 1998, the University of Georgia and Georgia State University conducted a study of state taxation, transportation and development policies, and identified several factors that favored suburban-over-urban development in the Atlanta area. Of the nine policies studied, land cost, affected by highway construction, was by far the leading factor in driving development out of the city and into suburban areas. Parking costs, permit delays, tax rates and demolition were also significant contributors. The researchers found that policies in the metropolitan Atlanta region had created an uneven playing field for development that was heavily tilted in favor of the suburbs.

Another study by the American Farmland Trust, looked at three important agricultural counties in California. It found that state and local policies, ranging from property taxation to development fees and zoning, prejudiced the market against efficient residential and commercial development and toward sprawl.

1.2.1 The Cost of Sprawl

A number of studies in the U.S. have determined that urban sprawl often consumes surrounding lands at a much higher rate than population growth for an area. For example, in the last 25 years, the population for Munroe County, in New York, grew by just 3000 people (from 713,000 to 716,000) while the built-up land area increased 76 percent.[8] In Illinois, Chicago's population has remained about the same over the last 20 years while its built-up land area has expanded by 40 percent.

It seems to be a common perception that increased residential development will increase the tax base and tax revenues for local government, thereby providing increased revenues to cover the cost of improved services to area residents. However, according to the results of more than 60 studies conducted across the U.S. by the American Farmland Trust, it costs more to provide residential services than is generated in additional tax revenue. These studies found that, on average, it costs $1.11 to service residential developments for every dollar generated, compared to just $ .31 to service farm and forest lands and $.29 for commercial/ industrial developments.[9]

A similar study was conducted by the Greater Yellowstone Coalition and Montana State University into the real economic impacts of different land uses in Gallatin County, Montana. Using simple fiscal analysis, they found that for every dollar that residential property owners pay into local government coffers, $1.47 is demanded in direct services. Conversely, agriculture and open space requires only 25 cents in services for every dollar contributed, while commercial and industrial lands require 18 and 7 cents, respectively.[10]

To date, there do not seem to have been any similar "cost of services" studies conducted in Canada.

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[8] Mayor William Johnson, Rochester, New York in a presentation to the Keep America Growing Conference, Philadelphia, Pennsylvania, June 6-9, 1999.

[9] American Farmland Trust – Farmland Information Centre. Cost of Community Services Study. Fact Sheet – January 2000.

[10] Ways to Conserve Wyoming's Wonderful Open Lands – A Guidebook. http://www.state.wy.us/governor/openspace/openspaces.htm.

1.3 A Brief Chronology of Farmland Protection Initiatives in Alberta

Over the past quarter century, there have been a number of initiatives to monitor land use and to try to minimize farmland loss in Alberta.

The objective of Alberta's *Planning Act*, which came into effect in 1977, was for long-term planning to occur at the regional and municipal level. It recognized that new developments should be targeted toward lower quality lands. At about the same time, the first Agricultural Land Base Monitoring (ALBS) study was conducted by Alberta Agriculture. It's purpose was to identify the amount of farmland that had gone out of agricultural production as well as the amount of new land brought into production over the previous five year period. The ALBS continues to be conducted every five years. It has shown that although the net loss has generally averaged less than one-tenth of one percent of total farmland in the province over any one reporting period, most of the farmland taken out of production had the highest capability for cereal and oilseed production.

In 1981, Bill 232 *(the Alberta Lands Inventory and Protection Act)* was reviewed by the legislature. This bill was modeled closely after British Columbia's *Land Commission Act*. Bill 232 was never enacted. Then in 1982, Bill 204 (the *Agricultural Land Protection Act*) was introduced. The intent was to establish an agricultural land commission and an agricultural land preservation fund. The Bill proposed using a variety of tools, rather than following the B.C. approach which was to freeze all agricultural land. At about the same time, the Environment Council of Alberta (ECA) began public hearings to assess the need for an agricultural lands commission. In December 1984, the ECA recommended establishment of an Agricultural Resources Conservation Board. The ECA's report also recommended that the responsibility for maintaining the agricultural land base should rest with the rural municipalities. A conservation board was never established.

In 1987, Alberta's version of Right-to-Farm legislation was enacted as the *Agriculture Operation Practices Act*. The AOPA was designed to protect Alberta farmers and ranchers from nuisance claims. On March 20, 2000, the *Farming Practices Statutes Amendment Act* was proclaimed, to further enhance the nuisance protection sections of the AOPA and to reduce the likelihood that a farm operation will be labeled a nuisance if it is following acceptable industry practices. The new legislation also places culpability on those who bring nuisance claims forward that fail to be substantiated. Furthermore, farmers can now be compensated for costs associated with defending themselves in court. In December 2001, AOPA was amended a second time. The amendments gave the Minister the authority to establish review committees to try and resolve nuisance complaints and rule on the appropriateness of the farming practice in question.

Alberta's Right to Farm legislation has broad implications for municipalities and their land use activities. Most notably, it allows a person to carry out any activity fitting the legislation's definition of agricultural operations, regardless of whether the municipal land use bylaw changes, the land switches ownership, someone else takes over the operation, or the adjoining land use changes.

In 1988, AAFRD, in cooperation with four other provincial ministries, began the Agricultural Land Base Study. The objectives of the study were to:

1. identify natural resource management options for expansion and intensification of the province's agricultural land base;
2. identify the geographic distribution and maximum potential increase in agricultural production through different management options;
3. assess the relative economics of the management options;
4. evaluate the impact of different management options on other resource uses; and
5. identify existing government programs that promote application of the management options which included Green Area conversion, irrigation expansion, drainage, deep plowing of solonetzic soils, liming of acid soils and summer fallow reduction.

In 1989, Bill 243 (the *Alberta Lands Inventory & Protection Act)* was introduced. The province's response at the time was that "there is still a significant amount of agricultural land that has not been brought on stream", albeit not of the same quality as what was being lost. Views were also expressed at that time that "with today's farming technology, the land that could be brought into production was of a highly productive quality and that agriculture's interests needed to be balanced against other economic development opportunities."[11]

In 1993, as a result of the ECA review of Bill 205, the idea of an Agricultural Resources Conservation Board was once again introduced. The Bill proposed to establish a board that would be charged with "encouraging the minimization of use of good agricultural land for other purposes" and "providing advice, education, coordination and assessment with respect to the use, conservation, enhancement and expansion of agricultural land".

In 1994, the provincial *Planning Act* was integrated into the new *Municipal Government Act*. The MGA abolished regional planning commissions and transferred the responsibility for preserving agricultural land to the municipalities. In 1996, the province developed a set of Provincial Land Use Policies (PLUPs) to guide municipalities in their land use decisions. Most municipalities have incorporated these policies into their Municipal Development Plans (MDPs) and Land Use Bylaws (LUBs). Section 6.1 of the PLUPs, which addresses Resource Conservation, encourages municipalities to:

1. identify, in consultation with Alberta Agriculture, Food and Rural Development, where agriculture and associated activities should be a primary land use;
2. limit the fragmentation of agricultural lands and their premature conversion to other uses, especially within the agricultural areas identified in accordance with policy #1;

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[11] Alberta Hansard; August 11, 1989; pg. 1371

3. direct non-agricultural development to areas where such development will not constrain agricultural activities;
4. minimize conflicts between intensive agricultural operations and incompatible land uses through the use of reciprocal setback distances (i.e. Minimum Distance Separation method from the Code of Practice for the Safe and Economic Handling of Animal Manure) and other mitigative measures.

Section 2 includes an assessment of the effectiveness of these policies.

1.4 Attitudes toward Land Use Planning and Farmland Protection

Although farmers and ranchers generally support the need for land use planning and farmland protection, they are also likely to be concerned about any type of land use controls, believing that such actions will impact on their private property rights. At the very least, they are likely to demand some form of fair compensation if control is implemented that limits their future options.

Land use zoning, a common form of land use control, has generally been opposed by landowners. They see zoning as a cost to them if they are no longer able to realize the development potential of their land. Other jurisdictions have generally found that farmers and ranchers are willing to cooperate with land preservation systems if the issues of equity and justice are addressed directly and positively. In the U.S., this has generally been accomplished through voluntary participation of landowners in tradable development rights, a farmland protection mechanism discussed later in this report.

It is interesting to note that a recent survey of householders, in three counties on the fringe of Chicago, found that they were willing to accept tax increases averaging $484 (US) per year for five years, to support a hypothetical referendum to permanently protect about 20,000 acres of farmland from development. While about one quarter of the respondents were unwilling to support such a program, forty four percent said that such a program should be the top funding priority in their county. The high level of support was attributed to residents of the area having an emotional tie to the land and seeing farmland and open space as a vital component of their quality of life.[12]

A new U.S. national poll[13] showed strong public concern about sprawl and suggests that the average American is ahead of many public officials in supporting solutions to sprawl. Commissioned by Smart Growth America, a nationwide coalition of over 60 public interest groups, the poll showed that 78 percent of Americans support policies to curb sprawl, "the haphazard and wasteful development that is damaging the environment and draining resources from established communities." Over 80 percent favored more cooperation on growth management among local governments, creating zones for green space and farmland and tax incentives to renovate older houses and revitalize economically depressed neighborhoods.

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[12] Douglas J. Krieger, Saving Open Spaces: Public Support for Farmland Protection. Center for Agriculture in the Environment. CAE/WP99-1, April 1999

[13] Smart Growth America Press Release; Washington, D.C., October 16, 2000 http://www.smartgrowthamerica.com

2.0 Municipal Land Use Planning and Practice in Alberta

This section of the report discusses results from an analysis of current municipal policies and practices in Alberta. An initial telephone survey of development officers and planning agencies in the rural municipalities was conducted in 1999 to identify what they see as the main development pressures; their concerns about loss and fragmentation; and their views on the current planning process. Consultations with elected municipal officials were held in the south, central and northern regions of the province to receive their views on loss and fragmentation. Subdivision and development permit data were also collected from over 60 municipalities across the agricultural regions of the province for the years 1997 to 1998 (as potential benchmark data for future studies) to see if local land use polices were being followed. Finally, Municipal Development Plans (MDPs) and Land Use Bylaws (LUBs) of each municipality were scanned to assess the spectrum of approaches being used to protect farmland, within the context of provincial regulations and policies.

2.1 The Issues

Every five years since 1976, Alberta Agriculture, Food and Rural Development has been monitoring and reporting on changes to the province's agricultural land base. Over that time, there has been an average net loss of less than 0.5% (based on 1996 total farmland estimates from Statistics Canada). These figures do not, however, indicate the degree of fragmentation that has occurred during that time period.

The most recent Agricultural Land Base Monitoring Study (1991-1995)[14] found that over 86% of total deletions from the farmland base were due to residential subdivision and oil and gas activity. Although the net loss has been low, over half has occurred on higher quality land (Land Capability Rating (CLI) of 1 to 3). Over time, if we continue to replace these higher quality soils with those of poorer quality (CLI rating of 4 to 6), the total productivity of Alberta's farmland base may be compromised.

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[14] Agricultural Land Base Monitoring Report, 1991-1995. Policy Secretariat, Alberta Agriculture Food and Rural Development.

2.2 What Municipalities Are Facing

Municipal councils face difficult choices when it comes to making balanced land use decisions. Most rural municipalities have seen their revenue base decrease and realize that they cannot rely solely on tax revenue from farmland to cover operating costs. As a result, they face added pressure to accommodate other industrial and commercial activities, and to allow more country residential (CR) development.

In rural municipalities near major urban centers, there also seems to be a greater risk of the agricultural "voice" being overshadowed in municipal council chambers. In the Municipal District of Rockyview, for example, the farmland protection organization known as Action for Agriculture estimates that 69,000 acres (about three townships) of agricultural land has been converted to urban and country residential development in the last 20 years.[15] It further estimates that the county has lost ten million dollars in agricultural production per year. The organization believes that one reason for this loss is that only about one-third of the councilors are farmers or ranchers, interested in protecting farmland and the agri-food industry.

If this is becoming a more common occurrence, then perhaps there is a need to find better ways to balance decision-making when addressing rural/urban/industrial concerns.

2.3 Methodology

2.3.1 Municipal Opinion Survey

Over 60 municipalities in the agricultural regions, including planning agencies, were surveyed to determine the extent of local concerns about loss and fragmentation of farmland. Subdivision authorities in each municipality were the key contacts for these phone interviews. The following questions were asked:

1. What are the main developmental pressures and what types of farming were limited by development activities (extensive or intensive)?
2. Is your municipality affected by loss and fragmentation, and is it a concern for your ratepayers?
3. Do your bylaws allow for more than one parcel out and what are your policies regarding subdivisions?
4. Where in the county is first parcel out activity most intense?
5. What policies are in place to restrict development and protect agricultural land?
6. What tools would you need to assist you in minimizing loss of agricultural land?
7. Are you aware of the Provincial Land Use Policies and do they help?

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[15] Harvey Buckley, President, Action for Agriculture, personal communication.

The answers to these questions were used to build a loss and fragmentation index (LFI) for agricultural land within the municipalities surveyed. The LFI is a preliminary, subjective indicator of developmental pressures in a municipality and the degree to which land use conflicts have impacted agricultural expansion and development. Municipalities were rated according to a high degree (1 to 3 LFI); average degree (4 to 6 LFI) or low degree (7 to 10 LFI) of loss and fragmentation. The LFI was compiled on the following logic:

Question (as above)	**Development Officer Response**
1	If any farming activities were said to be impacted, the county moved automatically into the 'medium' range (4 to 6 LFI)
2	If the answer was, "Yes, it is a concern", the county was moved into the medium range. If both responses (questions 1 and 2) were affirmative, the county was moved into the 'high' range (1 to 3 LFI)
3	Depending on the policy and answers to previous questions, the county's rating would be increased, i.e. a looser policy would increase the LFI where loss was an issue and pressures limiting ag expansion
4	To affirm the relationship between urban centres and increased subdivision activity
5 to 7	If a county indicated its present tools were inadequate, coupled with responses to previous questions, the LFI would be adjusted, i.e. if loss were an issue, pressures limiting, policies loose and present tools inadequate, the LFI would be increased.

2.3.2 Subdivision and Development Permit Activities

Subdivision and development permit data for 1997/1998 were collected from 60 municipalities and nine planning agencies. AAFRD staff visited municipal offices and pulled individual subdivision and development permit files. Customized data input forms were used to record legal location, land use before/after subdivisions, land quality, parcel size, first or more parcels out and zoning and appeal information (Appendix A). Since many counties do not yet have data stored electronically, the state of the files varied from office to office. Assumptions made about missing or unclear data are included in the footnotes at the bottom of the data tables in Section 2.5.

2.3.3 Scan of Land Use Policies in Rural Municipalities

Parkland Community Planning Services (PCPS)[16] was commissioned to classify municipal planning and policy approaches related to the protection and conversion of agricultural land. Municipal development plans (MDPs) and land use bylaws (LUBs) were scanned for approximately 40 municipalities. The classification that PCPS used was based on interpreting policies and sets of policies within these plans.

The scan focused on important agriculture-related policies, first parcel out polices, and an analysis of whether the Provincial Land Use Policies for agriculture are being incorporated into municipal plans.

Rural municipalities that were in the process of reviewing their plans were not included in the scan.

2.4 Results and Discussion

Results are presented for the three major components of this section – municipal opinion survey, land use activities and the scan of municipal land use policies. A brief agriculture profile is also presented for each municipality, to put the land use analysis in context with the farming structure within each county.

2.4.1 Municipal Opinion Surveys

Development Officer Survey

Analysis of the survey data shows that the municipalities experiencing the most intense development pressures are located along the Highway 2 corridor and around large urban centers (Figure 1). Loss and fragmentation around Calgary and Edmonton appear to be particularly intense and fragmentation is becoming more of an issue in these areas. Urban expansion towards the foothills is also placing development pressure on municipalities along the eastern slopes.

Table 1 shows some general trends from the survey: Intensive Livestock Operations (ILOs) were identified as the most common type of farming limited by development pressures. This was particularly the case in the Central Region where ILO limitations were cited by 82% of the respondents. Several municipalities indicated that stronger provincial guidelines are needed to guide land use decisions that will minimize country residential and ILO conflicts. Others noted that opposition to expanding or new ILO developments can arise just as readily from nearby farms as from country residential neighbours. Over 60% of the municipalities surveyed in the South and Central regions viewed loss and fragmentation as an issue. Respondents in the North and Peace regions saw loss and fragmentation as less of a concern.

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[16] Parkland Community Planning Services, 1999. The Protection of Agricultural Land and Operations: A review of Rural Municipal Development Plans and Land Use Bylaws. Suite 500, 4808 Ross Str., Red Deer AB, T4N 1X5, 25 pp.

Development officers indicated that most subdivision activity is occurring around urban areas in the South and Central regions (Table 1). Most municipalities permit first parcels out on agricultural lands. The exceptions are the municipalities of Ranchland, Foothills and Pincher Creek. A high percentage of municipalities also allow for more than one parcel out of a quarter section, generally after several conditions have been met (see Section 2.5.3.3, this report).

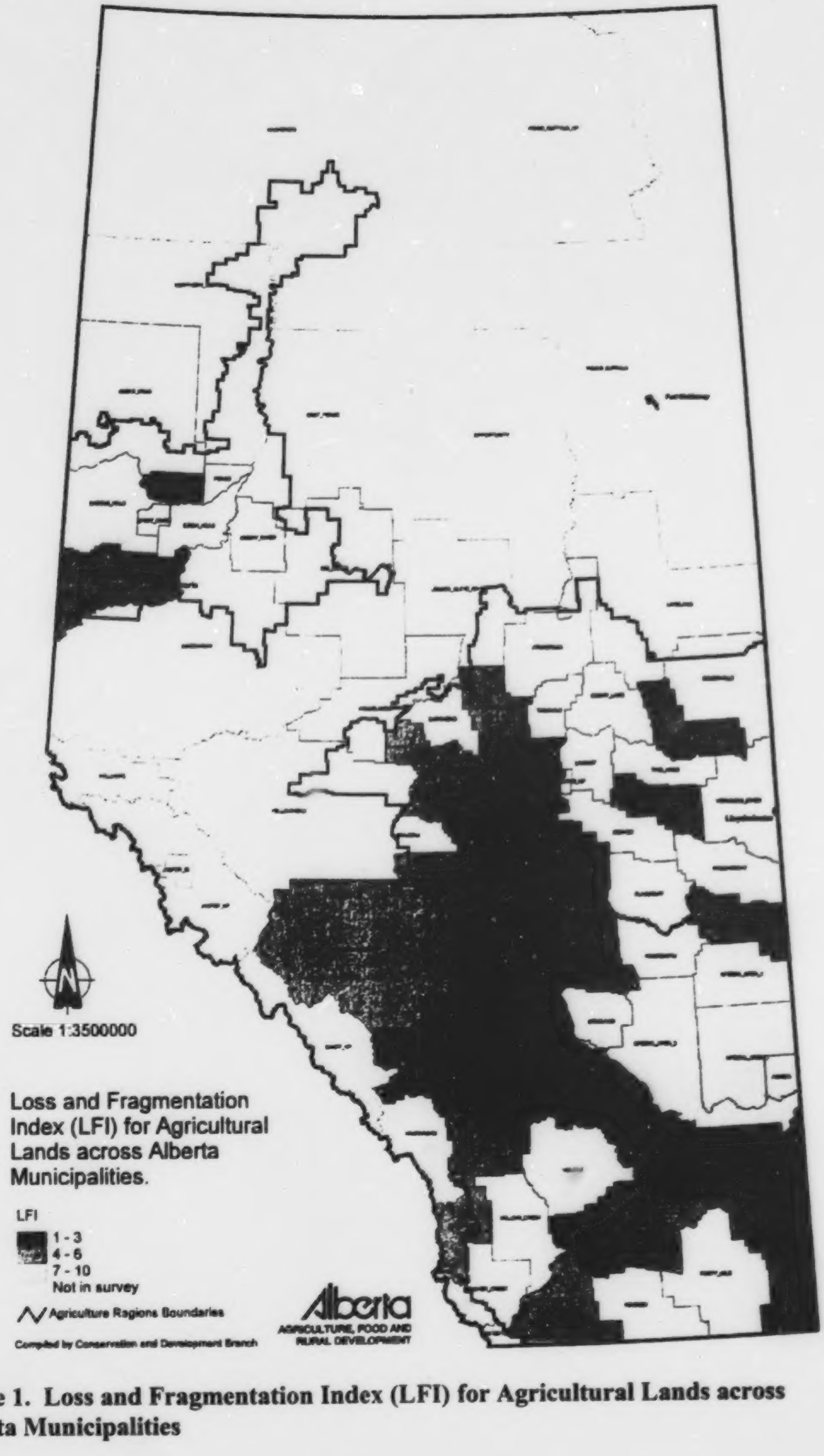
N
Scale 1:3500000
Loss and Fragmentation Index (LFI) for Agricultural Lands across Alberta Municipalities.
LFI
1 - 3
4 - 6
7 - 10
Not in survey
Agriculture Regions Boundaries
Compiled by Conservation and Development Branch
Alberta
AGRICULTURE, FOOD AND RURAL DEVELOPMENT

Figure 1. Loss and Fragmentation Index (LFI) for Agricultural Lands across Alberta Municipalities

Table 1. Summary of Survey Responses for each Agricultural Region

	Agricultural Regions			
Trend	**South**	**Central[a]**	**North**	**Peace**
Development Pressures				
Percent municipalities reporting ILOs[b] are affected	54	82	52	10
Areas where activity is intense	Near cities (70)	Near cities (64)	Near cities (39)	Near cities (20)
Municipalities (%) reporting that loss of farmland is an Issue[c]	62	73	43	20
Parcels Out				
Municipalities allowing first parcels out (% allowing)	85[d]	100	100	100
Municipalities allowing more than one parcel out (% allowing)	77	100	91	70
Tools				
Percent municipalities reporting they need better tools than PLUP[f] and current MDPs and LUBs[g]	38	73	65	20

a - calculated for those counties included in the survey (i.e not for Acadia and Special Places 1-3); b - Intensive Livestock Operations; c - includes those that answered 'somewhat' or 'Yes'; d - Ranchland and Foothills have stopped all first parcels out; e - in several cases, rezoning or criteria must be in place before > 1 parcel is allowed; f - Provincial Land Use Policies; g - Municipal Development Plans and Land Use Bylaws.

When Development Officers were asked about tools needed to minimize the impact on agricultural lands, over 50% felt that the current provincial land use policies did not go far enough in guiding them in their land use planning and practice. From this group, the responses included:

- Need regulations for urban fringe and highway corridor development (5% of respondents);
- Need strong provincial 'guidelines' for consistency, but with local-level decision making (20% of respondents);
- Need more inter-municipal planning with regional advisory boards (10% of respondents);
- Provincial Land Use Policies need to be stronger and more prescriptive (greater than 50% of municipalities).

Elected Municipal Officials Consultation

Reeves and councilors who participated in a series of three with the rural municipalities surrounding Lethbridge, Calgary and Edmonton, acknowledged that they were feeling development pressures from the large urban centers. They also agreed that political and economic realities make balancing development with agriculture's interests difficult. They agreed that local decision- making on land use is the best approach, however, different municipalities face different pressures and that there may be some areas where the province can support them in their land use planning. Suggestions included:

- Provide a variety of technical services/expertise on ILO siting, manure, waste and resource management;
- Need provincially supported, technically supported guidelines, criteria, or standards for ILO developments – municipalities can't afford to enforce – perhaps industry can self-regulate
- If conserving farmland is important to the province, then there should be provincial incentives to protect these farmlands and to minimize fragmentation
- Assist in long term planning through provincial guidelines and information gathering for economic development;
- Revamp Provincial Land Use Policies;
- Training for Appeal Boards
- Develop a legislative framework for tradable development rights and other tools;
- Develop criteria/guidelines and allow municipalities to fill in the framework to suit local needs (both for subdivision and ILO developments)

2.4.2 Subdivision and Development Permit Activities

Municipal Agriculture Profile

A brief agriculture profile for each municipality was developed to help in understanding the rural structure in each county (Appendix B). Municipalities in each agricultural region were sorted in order of increasing rural population. Generally speaking, municipalities in the higher impact areas (see Appendix B) tend to have a greater number of farms, a smaller average farm size, and more intensive farming operations (including livestock). The population of these areas also tends to be more dense, and contain more non-farm residents.

In low impact municipalities, where farm size tends to be larger and farming less intensive, the percentage of grain farms is relatively higher.

As more development occurs in these areas, there will likely be an increase in the number of conflicts between those with agricultural and those with non-agricultural pursuits.

Subdivision Activity for all types of Land Use

Total municipal subdivision activity for 1997/1998 is shown in Table 2. If total subdivision applications are used as an indicator, higher impact municipalities received two to ten times more subdivision applications, on average, than the low impact municipalities. The same trend occurs for the number of approved subdivisions. However, since higher impact municipalities handle so many more applications, their approval rate is lower than the rate for low impact municipalities. For example, the M.D. of Foothills (in the south), and M.D. of Rockyview (in the Central region), approved 20 – 30 percent fewer applications than the low impact municipalities in their regions. Since these numbers represent subdivision activity on lands used for a variety of purposes - country residential, agricultural, industrial, commercial, etc. - one cannot infer that agricultural land was exclusively taken out in these cases. The raw numbers, however, support what the phone survey indicated; that is, development pressures are highest around the larger urban centers and in the central corridor.

Table 2. Total Subdivision (SBDV) Activity for All Land Use Types in 1997 and 1998 in Selected Municipalities Ranked by Total Subdivision Applications.

County/MD	LFI[a]	Subdivision Applications			Subdivisions Approved		Approval Rate (%)		Cumulative Fragmentation Value[b*]
		1997	1998	Total	1997	1998	1997	1998	
South Region									
Ranchland	7	No Subdivisions allowed							
Forty Mile	8	5	8	13	5	8	100	100	1.20
Warner	7	12	14	26	12	14	100	100	1.50
Newell	3	22	14	[illegible]	22	14	100	[illegible]	[illegible]
Vulcan	7	14	23	37	14	23	100	100	1.80
Willow Creek	9	18	25	43	18	24	100	96.0	1.21
Cardston	6	21	26	47	20	25	95.2	96.2	1.84
Pincher Creek	8	31	17	48	30	15	96.8	88.2	1.00
Cypress	6	35	17	52	34	17	97.1	100.0	1.90
Taber	5	27	33	60	26	30	96.3	90.9	1.21
Lethbridge	2	28	39	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Wheatland	6	41	69	110	38	60	92.7	86.6	1.03
Foothills	[illegible]	158	160	318	121	104	[illegible]	[illegible]	[illegible]
Central									
Special Area 2	10	0	3	3	N/A	3	N/A	100	1.00
Special Area 3	10	5	3	8	5	3	100	100	1.00
Paint Earth	10	3	6	9	3	6	100	100	1.00
Bighorn	3	4	6	10	4	5	100	83	[illegible]
Special Area 4	10	6	5	11	6	5	100	100	1.00
Starland	8	6	11	17	6	11	100	100	1.00
Stettler**	6	16	22	38	16	22	100	100	2.45
Kneehill	5	25	25	50	25	25	100	100	1.08
Lacombe	3	22	42	64	18	32	81.8	50.0	[illegible]
Ponoka	4	48	39	87	39	34	81.3	87.2	1.00
Clearwater	5	64	84	148	64	75	100	89.3	2.23
Mountain View	3	77	71	148	67	37	[illegible]	[illegible]	[illegible]
Red Deer	3	84	86	170	49	62	58.0	[illegible]	[illegible]
Rockyview	1	145	141	286	115	115	79.0	[illegible]	[illegible]
North Region									
Minburn	5	6	6	12	5	6	83.0	100	1.33
Smoky Lake	7	7	6	13	7	6	100	100	1.00
Two Hills	7	7	8	15	7	8	100	100	1.00
Provost	6	10	8	18	10	8	100	100	1.00
Wainwright	7	12	6	18	12	6	100	100	1.56
Beaver	8	11	9	20	11	9	100	100	2.15

Table 2. Total Subdivision (SBDV) Activity for All Land Use Types in 1997 and 1998 in Selected Municipalities Ranked by Total Subdivision Applications.

County/MD	LFI[a]	Subdivision Applications			Subdivisions Approved		Approval Rate (%)		Cumulative Fragmentation Value[b*]
		1997	1998	Total	1997	1998	1997	1998	
South Region									
Ranchland	7	No Subdivisions allowed							
Forty Mile	8	5	8	**13**	5	8	100	100	1.20
Warner	7	12	14	**26**	12	14	100	100	1.50
Newell	**3**	**22**	**14**	**36**	**22**	**14**	**100**	**100**	**1.61**
Vulcan	7	14	23	**37**	14	23	100	100	1.80
Willow Creek	9	18	25	**43**	18	24	100	96.0	1.21
Cardston	6	21	26	**47**	20	25	95.2	96.2	1.84
Pincher Creek	8	31	17	**48**	30	15	96.8	88.2	1.00
Cypress	6	35	17	**52**	34	17	97.1	100.0	1.90
Taber	5	27	33	**60**	26	30	96.3	90.9	1.21
Lethbridge	**2**	**28**	**39**	**67**	**23**	**34**	**82.0**	**87.0**	[illegible]
Wheatland	6	41	69	**110**	38	60	92.7	86.6	1.03
Foothills	**4**	**158**	**160**	**318**	**121**	**104**	**76.6**	**65.0**	**4.95**
Central									
Special Area 2	10	0	3	**3**	N/A	3	N/A	100	1.00
Special Area 3	10	5	3	**8**	5	3	100	100	1.00
Paint Earth	10	3	6	**9**	3	6	100	100	1.00
Bighorn	**3**	**4**	**6**	**10**	**4**	**5**	**100**	**83.3**	**N/A**
Special Area 4	10	6	5	**11**	6	5	100	100	1.00
Starland	8	6	11	**17**	6	11	100	100	1.00
Stettler**	6	16	22	**38**	16	22	100	100	2.45
Kneehill	5	25	25	**50**	25	25	100	100	1.08
Lacombe	3	22	42	**64**	18	32	81.8	50.0	1.19
Ponoka	4	48	39	**87**	39	34	81.3	87.2	1.00
Clearwater	5	64	84	**148**	64	75	100	89.3	2.23
Mountain View	**3**	**77**	**71**	**148**	**67**	**37**	**94.4**	**52.1**	[illegible]
Red Deer	**3**	**84**	**86**	**170**	**49**	**62**	**58.0**	**72.0**	**2.10**
Rockyview	**1**	**145**	**141**	**286**	**115**	**115**	**79.0**	**81.0**	**13.80**
North Region									
Minburn	5	6	6	**12**	5	6	83.0	100	1.33
Smoky Lake	7	7	6	**13**	7	6	100	100	1.00
Two Hills	7	7	8	**15**	7	8	100	100	1.00
Provost	6	10	8	**18**	10	8	100	100	1.00
Wainwright	7	12	6	**18**	12	6	100	100	1.56
Beaver	8	11	9	**20**	11	9	100	100	2.15

County/MD	LFI[a]	Subdivision Applications			Subdivisions Approved		Approval Rate (%)		Cumulative Fragmentation Value[b*]
		1997	1998	Total	1997	1998	1997	1998	
Thorhild	7	10	14	**24**	9	14	90.0	100	1.00
Lamont	7	31	7	**38**	31	7	100	100	1.68
Barrhead	7	18	21	**39**	17	21	94.4	100	1.10
St. Paul	5	23	18	**41**	23	18	100	100	1.00
Camrose	5	9	39	**48**	9	38	100	97.4	N/A
Lac Ste. Anne	5	28	21	**49**	28	21	100	100	1.24
Athabasca	7	24	28	**52**	21	28	87.5	100	1.54
Westlock	6	31	32	**53**	31	30	100	93.8	1.16
Vermilion River	7	25	30	**55**	24	29	96.0	96.7	1.98
Bonnyville	7	27	31	**58**	27	31	100	100	1.19
Leduc	3	58	37	**99**	50	35	86.0	94.0	1.78
Parkland	4	44	62	**106**	40	41	90.9	66.1	2.39
Wetaskiwin	6	49	64	**113**	47	50	95.9	93.8	1.89
Sturgeon	2	60	75	**135**	33	61	55.0	93.8	2.65
Strathcona	1	84	89	**173**	65	47	77.4	52.8	[illegible]
Peace Region									
East Peace	9	4	5	**9**	4	4	100	80.0	1.00
Birch Hills	8	6	4	**10**	6	3	100	75.0	1.00
Peace	9	4	8	**12**	4	8	100	100	1.08*
Clear Hills	10	9	4	**13**	9	4	100	100	1.00
Smoky River	10	8	5	**13**	8	5	100	100	1.00
Spirit River	8	11	3	**14**	10	3	91.0	100	1.00
Fairview	5	10	8	**18**	10	7	100	87.5	1.11
Saddle Hills	10	8	12	**20**	8	12	100	100	1.00
Mackenzie	-	27	38	**65**	26	36	96.3	94.7	1.03***
Grande Prairie	3	94	132	**226**	83	102	88.0	77.0	3.14
Shading based on LFI		HIGH (1 – 3)			MEDIUM (4 – 6)			LOW (7 – 10)	

a – Loss and Fragmentation index; b - indicates the degree of past subdivision and fragmentation activity occurring on the particular quarter sections being examined in our sampling period, calculated as total number of parcels divided by no of subdivisions approved in 1997 and 1998.

*Many CFV are severely under-estimated because of indications of multiple parcels, but no numerical value given

**One application to subdivide 47 parcels doubled the number of parcels and greatly increased the CFV

***Number of Parcels out not indicated – assumed first parcel in these cases.

County/MD	LFI[a]	Subdivision Applications			Subdivisions Approved		Approval Rate (%)		Cumulative Fragmentation Value[b*]
		1997	1998	Total	1997	1998	1997	1998	
Thorhild	7	10	14	**24**	9	14	90.0	100	1.00
Lamont	7	31	7	**38**	31	7	100	100	1.68
Barrhead	7	18	21	**39**	17	21	94.4	100	1.10
St. Paul	5	23	18	**41**	23	18	100	100	1.00
Camrose	5	9	39	**48**	9	38	100	97.4	N/A
Lac Ste. Anne	5	28	21	**49**	28	21	100	100	1.24
Athabasca	7	24	28	**52**	21	28	87.5	100	1.54
Westlock	6	31	32	**53**	31	30	100	93.8	1.16
Vermilion River	7	25	30	**55**	24	29	96.0	96.7	1.98
Bonnyville	7	27	31	**58**	27	31	100	100	1.19
Le[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Parkland	4	44	62	**106**	40	41	90.9	66.1	2.39
Wetaskiwin	6	49	64	**113**	47	50	95.9	93.8	1.89
St[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
St[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Peace Region									
East Peace	9	4	5	**9**	4	4	100	80.0	1.00
Birch Hills	8	6	4	**10**	6	3	100	75.0	1.00
Peace	9	4	8	**12**	4	8	100	100	1.08*
Clear Hills	10	9	4	**13**	9	4	100	100	1.00
Smoky River	10	8	5	**13**	8	5	100	100	1.00
Spirit River	8	11	3	**14**	10	3	91.0	100	1.00
Fairview	5	10	8	**18**	10	7	100	87.5	1.11
Saddle Hills	10	8	12	**20**	8	12	100	100	1.00
Mackenzie	-	27	38	**65**	26	36	96.3	94.7	1.03***
Grande Prairie	3	[illegible]	132	226	81	102	88.0	77.0	[illegible]
Shading based on LFI	[illegible]				MEDIUM (4 – 6)		LOW (7 – 10)		

a – Loss and Fragmentation index; b - indicates the degree of past subdivision and fragmentation activity occurring on the particular quarter sections being examined in our sampling period, calculated as total number of parcels divided by no of subdivisions approved in 1997 and 1998.

*Many CFV are severely under-estimated because of indications of multiple parcels, but no numerical value given

**One application to subdivide 47 parcels doubled the number of parcels and greatly increased the CFV

***Number of Parcels out not indicated – assumed first parcel in these cases.

Prior Subdivision Activity

The number of earlier subdivisions were counted for each quarter section where a subdivision application had been made, in order to get a rough estimate of the overall degree of fragmentation that has occurred on these quarters.

In general, higher impact municipalities (LFI of 1 to 6) tended to have a higher cumulative fragmentation value (shaded lines in Table 2) than the low impact municipalities. This also correlates with the total subdivision activity ranking. Where subdivisions are allowed to occur, municipalities tend to experience greater pressures to continue subdividing agricultural land. Once fragmentation begins, policies become less restrictive regarding further subdivision in the area, and it becomes more difficult to stop further subdivision activity. The increased development pressure experienced by higher impact municipalities has led to more multi-parcel subdivisions in past years and greater fragmentation in these areas. This finding supports the results of the municipal survey which indicated that those areas where loss of farmland is an issue and farming activities are impacted had a higher degree of fragmentation.

There was also a correlation between total hectares subdivided in each municipality and those municipalities experiencing higher development pressures (Table 2; shaded lines), as well as a trend toward more agricultural land being lost to other types of development in the higher impact municipalities.

Subdivision of Agricultural Land

To calculate the amount of land removed from the agricultural land base, only subdivision applications that indicated the new parcel would be converted from an agricultural use to a non-agricultural use were included. Farmstead separations and areas zoned as extensive agriculture/country residential were included in the non-agricultural category. In some cases, assumptions had to be made about land uses, particularly where parcel sizes did not seem to fit the proposed land use, or a designated land use was not indicated in the application form. For example, if a parcel less than 10 hectares (ha) did not have a designated land use, it was marked as country residential. There were also situations where a parcel with two or less acres was designated as 'extensive agriculture.' These were included as country residential.

As shown in Table 3, more than 50% of the land removed from agricultural production was generally better quality, more productive land, with a CLI rating of 1 to 3 (CLI 4 in a few cases). This was especially true in the South, Central and Peace regions of the province. There were, however, some exceptions, such as the M.D. of Cypress in the South and Clearwater in the Central region. In the North, with its preponderance of Gray Luvisolic soils, an average of 49.8% of the land taken out of agricultural production was better quality land. As in past studies, the amount of farmland lost over the two-year period was relatively small (less than one percent) compared to the amount of agricultural land in each of the municipalities.

Country residential development was the chief type of agricultural land conversion. In nearly 90% of the municipalities, almost three quarters of the farmland subdivided was being converted to country residential developments (Table 3). This included farmstead separations. A notable exception was Red Deer, which converted substantial acreage to wetland conservation habitat over the two-year monitoring period.

Table 3. Total and Agricultural Land Lost in 1997 and 1998 in Municipalities, Ranked by Total Land Subdivided

County/MD	Total land Subdivided (ha)	Ag Land taken out (ha)	Percent Ag land taken out	Better quality Ag land lost (%)	Percentage of Agricultural land going to various uses (%)				
					Industrial	Commercial	Recreational	Public	Residential
South Region									
Ranchland	**No Subdivisions Allowed**								
Forty Mile	116.0	58.3	50.0	50.0	33.6	-	-	11.0	55.4
Pincher Creek	151.9	72.5	47.7	N/A	-		-	-	100.0
Cypress ♠	253.2	27.0	11.0	21.5	-	9.0	-	-	91.0
Newell	257.7	51.7	20[illegible]	N/A	[illegible]	16.0 (Ag)	[illegible]	[illegible]	84.0
Warner	283.1	76.5	27.0	95.8	-	-	2.3	0.9	96.8
Willow Creek	295.0	161.0	54.5	60.4	-	-	-	-	100.0
Taber	396.7	125.0	31.5	89.9	-	-	-	4.1	95.9
Lethbridge	439.3	138.0	31.0	97.0	29.3 [illegible]	[illegible]	[illegible]	[illegible]	70.[illegible]
Cardston	448.9	129.6	28.9	67.4	-	6.8	-	0.6	92.5
Wheatland	577.2	217.3	37.6	84.9	-	8.8 (Ag)	-	0.8	82.6
Vulcan	558.1	287.4	52.0	55.0	14.3 (Ag)	0.7	19.7	1.4	63.9
Foothills♥	**434.7//16994**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Totals/ Average	**5277.1**	**1344.3**	**35.6**	**69.1**					
Central Region									
SA #2	8.7	8.2	94.2	50.0	-	-	-	-	100.0
S.A. #4	35.8	35.8	100.0	89.0	-	-	-	-	100.0
S.A.#3	57.3	18.6	32.5	51.0	-	-	-	0.8	99.2
Paintearth	108.6	22.1	20.3	100.0	-	-	-	-	100.0
Bighorn	116.8	20	17.1	N/A	[illegible]	-	[illegible]	[illegible]	10[illegible]
Starland	131.3	65.2	50.0	73.0	-	-	-	-	100.0
Stettler ♠	**206.5**	**202.0**	**97.8**	**N/A**	**20.6**	**-**	**-**	**<1.0**	**79.4**
Kneehill	**242.4**	**200.1**	**82.5**	**N/A**	**-**	**17.0**	[illegible]	[illegible]	**83.0**

Table 3. Total and Agricultural Land Lost in 1997 and 1998 in Municipalities, Ranked by Total Land Subdivided

County/MD	Total land Subdivided (ha)	Ag Land taken out (ha)	Percent Ag land taken out	Better quality Ag land lost (%)	Percentage of Agricultural land going to various uses (%)				
					Industrial	Commercial	Recreational	Public	Residential
South Region									
Ranchland	**No Subdivisions Allowed**								
Forty Mile	116.0	58.3	50.0	50.0	33.6	-	-	11.0	55.4
Pincher Creek	151.9	72.5	47.7	N/A	-		-	-	100.0
Cypress ♠	253.2	27.0	11.0	21.5	-	9.0	-	-	91.0
Newell	**257.7**	**51.7**	**20.0**	**N/A**	-	**16.0 (Ag)**	-	-	**84.0**
Warner	283.1	76.5	27.0	95.8	-	-	2.3	0.9	96.8
Willow Creek	295.0	161.0	54.5	60.4	-	-	-	-	100.0
Taber	396.7	125.0	31.5	89.9	-	-	-	4.1	95.9
Lethbridge	**439.3**	**138.0**	**31.0**	**97.0**	**29.3 (Ag)**	-	-	-	**70.7**
Cardston	**448.9**	**129.6**	**28.9**	**67.4**	-	**6.8**	-	**0.6**	**92.5**
Wheatland	**577.2**	**217.3**	**37.6**	**84.9**	-	**8.8 (Ag)**	-	**0.8**	**82.6**
Vulcan	558.1	287.4	52.0	55.0	14.3 (Ag)	0.7	19.7	1.4	63.9
Foothills♥	**434.7//16994**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Totals/ Average	**5277.1**	**1344.3**	**35.6**	**69.1**					
Central Region									
SA #2	8.7	8.2	94.2	50.0	-	-	-	-	100.0
S.A. #4	35.8	35.8	100.0	89.0	-	-	-	-	100.0
S.A.#3	57.3	18.6	32.5	51.0	-	-	-	0.8	99.2
Paintearth	108.6	22.1	20.3	100.0	-	-	-	-	100.0
Bighorn	**116.8**	**20**	**17.1**	**N/A**	-	-	-	-	**100.0**
Starland	131.3	65.2	50.0	73.0	-	-	-	-	100.0
Stettler ♠	**206.5**	**202.0**	**97.8**	**N/A**	**20.6**	-	-	**<1.0**	**79.4**
Kneehill	**242.4**	**200.1**	**82.5**	**N/A**	-	**17.0**	-	-	**83.0**

County/MD	Total land Subdivided (ha)	Ag Land taken out (ha)	Percent Ag land taken out	Better quality Ag land lost (%)	Percentage of Agricultural land going to various uses (%)				
					Industrial	Commercial	Recreational	Public	Residential
Lacombe	396.9	98.1	24.7	N/A	1.0	<1.0	-	1.0	98.0
Mountain-View♠	682.9	340.8	49.9	61.3	10.0	1.8	-	-	88.2
Ponoka	793.5	258.9	32.6	78.5	1.7	14.0	-	-	84.3
Red Deer	811.6	690.3	85.0	56.0	-	1.0	74.8[d]	0.6	23.6
ClearwaterΦ	1381.3	1070.4	77.5	14.1	4.0	-	-	0.4	81.0
Rockyview**	1871.6	[illegible]	24.0	54.0	[illegible]	[illegible]	[illegible]	0.3	92.2
Total/ Average	**6845.2**	**3472.0**	**56.3**	**63.7**					
North Region									
Minburn	84.9	84.9	100.0	86.1		58.9			41.9
Provost	104.3	49.5	47.4	94.4		22.5			77.5
Smoky Lake	104.3	41.4	39.6	N/A					100.0
Two Hills	107.1	86.9	81.2	N/A					100.0
Wainwright	140.2	79.7	56.8	41.0			30.1		69.9
Thorhild	159.2	73.3	46.0	58.9					100.0
Beaver	164.3	66.9	34.0	55.3	20.0				80.0
Barrhead*	239.5	102.7	42.9	44.7					100.0
Bonnyville	306.5	223.0	72.7	N/A	21.5	3.6	3.6		71.3
St. Paul→	**414.1**	**205.6**	**49.6**	**44.1**					**98.0**
Vermilion River	431.0	338.9	78.6	N/A	53.8	1.2		0.8	44.2
Camrose	470.4	248.9	52.9	N/A		12.7	4.4		82.9
Lac Ste. Anne**	496.0	92.67	18.7	33.1					**100.0**
Westlock●	**545.1**	**195.2**	**35.8**	**31.4('97)**	**16.4**			**16.6**	**64.4**
Lamont▲	588.8	140.4	23.85	53.2	63.2	2.1		10.8	23.9
Athabasca	647.9	160.0	24.7	38.1	2.8				97.2

County/MD	Total land Subdivided (ha)	Ag Land taken out (ha)	Percent Ag land taken out	Better quality Ag land lost (%)	Percentage of Agricultural land going to various uses (%)				
					Industrial	Commercial	Recreational	Public	Residential
Parkland	813.7	164.4	20.2	56.5	14.0				86.0
Wetaskiwin⊗	1109.2	422.1	38.1	38.8	1.9	1.9	3.6	0.4	70.3
Leduc	**1301.1**	**376.2**	**28.9**	50.7	3.8				96.2
Sturgeon■	**1188.1**	**451.9**	**38.0**	28.0	2.4			0.6	97.1
Strathcona■	**N/A**	**559.5**	**N/A**	42.5	8.0				85.6
Total/ Average	**9415.7**	**4164.1**	**46.5**	**51.6**					
Peace Region									
Peace♣	30.8	23.9	77.8	100.0	-	-	-	-	100.0
Clear Hills♣	52.2	52.2	100.0	100.0	-	-	-	-	100.0
Birch Hills	64.4	43.7	67.9	58.8	-	-	-	4.58	95.4
Fairview♣	65.4	36.6	55.9	91.1	4.4	-	-	-	95.6
East Peace♣	72.3	72.3	100.0	94.4	-	-	-	-	100.0
Smoky River♣	90.1	83.8	93.1	100.0	-	-	-	-	100.0
Spirit River	98.6	44.7	45.4	91.03					100.0
Mackenzie♣	249.0	184.2	74.0	90.8	2.2	-	-	0.7	97.1
Saddle Hills	308.8	122.5	40.0	N/A	-	-	-	-	100.0
Grande Prairie	**1198.7**	**1010.6**	**84.4**	**N/A**	5.2	2.0		-	92.8
Total/ Average	**2230.3**	**1674.5**	**73.9**	**90.8**					

Shading based on LFI (Table 2)	■	MEDIUM (4 – 6)	LOW (7 – 10)

County/MD	Total land Subdivided (ha)	Ag Land taken out (ha)	Percent Ag land taken out	Better quality Ag land lost (%)	Percentage of Agricultural land going to various uses (%)				
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Red Deer	811.6	690.3	85.0	56.0	[illegible]	4.0	[illegible]	0.6	23.6
ClearwaterΦ	1381.3	1070.4	77.5	14.1	4.0	-	-	0.4	81.0
Ro[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total/ Average	6845.2	3472.0	56.3	63.7					
North Region									
Minburn	84.9	84.9	100.0	86.1		58.9			41.9
Provost	104.3	49.5	47.4	94.4		22.5			77.5
Smoky Lake	104.3	41.4	39.6	N/A					100.0
Two Hills	107.1	86.9	81.2	N/A					100.0
Wainwright	140.2	79.7	56.8	41.0			30.1		69.9
Thorhild	159.2	73.3	46.0	58.9					100.0
Beaver	164.3	66.9	34.0	55.3	20.0				80.0
Barrhead*	239.5	102.7	42.9	44.7					100.0
Bonnyville	306.5	223.0	72.7	N/A	21.5	3.6	3.6		71.3
St. Paul→	414.1	205.6	49.6	44.1					98.0
Vermilion River	431.0	338.9	78.6	N/A	53.8	1.2		0.8	44.2
Camrose	470.4	248.9	52.9	N/A		12.7	4.4		82.9
Lac Ste. Anne**	496.0	92.67	18.7	33.1					100.0
Westlock●	545.1	195.2	35.8	31.4('97)	16.4			16.6	64.4
Lamont▲	588.8	140.4	23.85	53.2	63.2	2.1		10.8	23.9
Athabasca	647.9	160.0	24.7	38.1	2.8				97.2

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Leduc	1301.1	376.2	28.9	50.7	3.8				96.2
Sturgeon	1188.1	451.9	38.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	N/A	[illegible]	N/A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total/ Average	**9415.7**	**4164.1**	**46.5**	**51.6**					
Peace Region									
Peace♣	30.8	23.9	77.8	100.0	-	-	-	-	100.0
Clear Hills♣	52.2	52.2	100.0	100.0	-	-	-	-	100.0
Birch Hills	64.4	43.7	67.9	58.8	-	-	-	4.58	95.4
Fairview♣	65.4	36.6	55.9	91.1	4.4	-	-	-	95.6
East Peace♣	72.3	72.3	100.0	94.4	-	-	-	-	100.0
Smoky River♣	90.1	83.8	93.1	100.0	-	-	-	-	100.0
Spirit River	98.6	44.7	45.4	91.03					100.0
Mackenzie♣	249.0	184.2	74.0	90.8	2.2	-	-	0.7	97.1
Saddle Hills	308.8	122.5	40.0	N/A	-	-	-	-	100.0
Grande Prairie	1198.7	1010[illegible]	[illegible]	N/A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total/ Average	**2230.3**	**1674.5**	**73.9**	**90.8**					

Shading based on LFI (Table 2)	▇	MEDIUM (4 – 6)	LOW (7 – 10)

a - Based on land that was categorized as 'agricultural' at the time of subdivision, and the proposed use being categorized as Country Residential, Industrial, Commercial, Recreational or some otherland use category other than agriculture

b - of the agricultural land taken out in 1997 and 1998, the proportion of better agricultural land that was removed. Based on either the municipalities' definition of better ag land or , where no definition exists, based on a Land Capability rating of 1 to 3, or a Farm Assessment Rating of 40% or better

c - numbers in brackets represent the percentage of the approved subdivisions whose proposed use is agriculture industrial or commercial

d - Wetlands Conservation for Ducks Unlimited.

St. Paul – 1.96% of agricultural land out is "0B" – unknown land use

■ many blanks in parcel size and proposed use, therefore totals are understated; Strathcona expected to be in the top range

♥ Many blanks in data – 1434.7 estimated assuming all blanks were refused subdivisions (no date on Approval date) and 1699.4 estimated assuming blanks were not refused.

♠ Incomplete dataset

* Barrhead – CLI-good; 1-3 not exceptions

● Better Quality ag land is for 1997 only, no value for 1998

** Lac Ste. Anne – 4 SH parcels, all less than 10 ha; therefore considered CR

♣ Municipalities served by McKenzie Municipal Services (MMP) – no information provided on existing and proposed land use before and after subdivision. Assumptions were made about land use based on information provided and conversation with MMS staff.

▲ Lamont – parcels with more than 1 FAR rating: assumed majority of land was first rating and deleted 2nd. On all but one parcel with multiple ratings, both ratings were >40%.

⊛ Wetaskiwin – 21.95% of agricultural land went into "other uses"

Φ Clearwater – amount of better quality Ag land taken out underestimated because a range of FAR (farm assessment ratings were given for each subdivision. An average was taken which quite often brought the quality to below 40%, cutting out the better quality land.

First Parcel Out Activities

First parcels out, including farmstead separations and other residential uses, accounted for an average of more than 70% of the subdivision activity on agricultural land across all regions (Table 4). For municipalities in the South, Central, North and Peace regions, first parcel subdivisions totaled 941, 2778, 2915 and 1507 hectares, respectively. More than 70% of the land removed through first parcel subdivisions was better quality agricultural land (roughly 6,000 ha). Most municipal plans do not consider land quality when allowing first parcels, nor do they have a choice in directing subdivisions to poorer quality land when a farmer applies to subdivide a farmstead. Moreover, since the land occupied by the farmstead (house, outbuildings, dugout, etc.) was not actually in production to begin with, it has not really been 'removed' from the agricultural land base.

Table 4. Agricultural Land Activity – Parcels Out in 1997 and 1998 in Selected Counties, Ranked by the Proportion of Multi-parcel Subdivisions Per Applications.

County/MD	Average Parcel Size (ha)	Proportion of 1st Parcels per Ag SBDVs	1st Parcels out on better Ag Land[a] (%)	Proportion of 2nd, 3rd, 4th, etc. parcels per Ag SBDVs	2nd, 3rd, etc Parcels on better Ag Land (%)
South Region					
Ranchland	No Subdivisions Allowed				
Forty Mile	8.3	1.00	50.0	0.0	0.0
Vulcan	15.6	0.9	92.0	0.1	N/A
Wheatland	**2.6**	**0.8**	**71.4**	**0.2**	**28.5**
Willow Creek	4.4	0.7	65.5	0.3	34.5
Taber	**2.8**	**0.7**	**69.6**	**0.3**	**26.2**
Lethbridge	**3.9**	**0.7**	**32.0**	**0.3**	**100.0**
Pincher Creek	2.6	0.6	N/A	0.4	N/A
Cypress	**1.7**	**0.6**	**30.0**	**0.4**	**0.0**
Warner	4.2	0.6	60.0	0.4	35.5
Foothills	**N/A**	**N/A**	[illegible]	[illegible]	[illegible]
Newell	**1.8**	[illegible]	[illegible]	[illegible]	[illegible]
Cardston	**4.1**	**0.3**	**50.0**	**0.7**	**72.7**
Total Average	**4.7**	**0.7**	**62.3**	**0.3**	**37.2**
Central Region					
Stettler	5.5	0.6	N/A	N/A	N/A
Paintearth	3.7	1.0	100.0	0.0	0.0
Special Area #3	4.3	1.0	42.0	0.0	0.0
Special Area #2	4.0	1.0	50.0	0.0	0.0
Starland	4.4	1.0	82.0	0.0	0.0

First Parcel Out Activities

First parcels out, including farmstead separations and other residential uses, accounted for an average of more than 70% of the subdivision activity on agricultural land across all regions (Table 4). For municipalities in the South, Central, North and Peace regions, first parcel subdivisions totaled 941, 2778, 2915 and 1507 hectares, respectively. More than 70% of the land removed through first parcel subdivisions was better quality agricultural land (roughly 6,000 ha). Most municipal plans do not consider land quality when allowing first parcels, nor do they have a choice in directing subdivisions to poorer quality land when a farmer applies to subdivide a farmstead. Moreover, since the land occupied by the farmstead (house, outbuildings, dugout, etc.) was not actually in production to begin with, it has not really been 'removed' from the agricultural land base.

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Forty Mile	8.3	1.00	50.0	0.0	0.0
Vulcan	15.6	0.9	92.0	0.1	N/A
Wheatland	2.6	0.8	71.4	0.2	28.5
Willow Creek	4.4	0.7	65.5	0.3	34.5
Taber	2.8	0.7	69.6	0.3	26.2
Lethbridge	3.9	0.7	72.0	0.3	100.0
Pincher Creek	2.6	0.6	N/A	0.4	N/A
Cypress	1.7	0.6	30.0	0.4	0.0
Warner	4.2	0.6	60.0	0.4	35.5
Foothills	N/A	N/A	N/A	N/A	N/A
Newell	1.8	0.5	N/A	0.5	N/A
Cardston	4.1	0.3	50.0	0.7	72.7
Total Average	4.7	0.7	62.3	0.3	37.2
Central Region					
Stettler	5.5	0.6	N/A	N/A	N/A
Paintearth	3.7	1.0	100.0	0.0	0.0
Special Area #3	4.3	1.0	42.0	0.0	0.0
Special Area #2	4.0	1.0	50.0	0.0	0.0
Starland	4.4	1.0	82.0	0.0	0.0

County/MD	Average Parcel Size (ha)	Proportion of 1st Parcels per Ag SBDVs	1st Parcels out on better Ag Land[a] (%)	Proportion of 2nd, 3rd, 4th, etc. parcels per Ag SBDVs	2nd, 3rd, etc Parcels on better Ag Land (%)
Special Area #4	3.2	1.0	95.0	0.0	0.0
ClearwaterΦ	8.7	0.8	26.0	0.2	11.5
Ponoka	5.8	0.8	83.0	0.2	17.0
Kneehill	4.6	0.8	N/A	0.2	N/A
Red Deer	11.3	0.7	84.0	0.3	62
Lacombe	3.1	0.7	95.8	0.3	4.2
Bighorn	5.0	0.7	N/A	0.3	N/A
Rockyview	4.9	0.6	66.0	0.4	37.0
Minburn	3.9	0.6	67.0	0.4	60.0
Average	**5.2**	**0.8**	**71.9**	**0.2**	**17.4**
North Region					
Camrose→	7.1	0.9	N/A	N/A	N/A
Two Hills	6.7	1.0	N/A	N/A	N/A
Provost	4.5	1.0	100.0	0.0	0.0
Barrhead	4.0	1.0	60.0	0.0	100.0
Smoky Lake	4.6	0.9	N/A	0.1	N/A
Wainwright	5.7	0.9	62.5	0.1	N/A
Wetaskiwin	5.5	0.7	63.2	0.1	27.3
Bonnyville	5.3	0.8	N/A	0.2	N/A
Westlock	5.0	0.8	53.1	0.2	0.0
Lac Ste. Anne	3.6	0.8	40.9	0.2	25.0
Thorhild	5.8	0.8	85.7	0.2	50.0
Vermilion River	8.1	0.6	N/A	0.3	N/A
St. Paul	6.6	0.7	40.9	0.3	12.5
Parkland	4.8	0.7	60.0	0.3	22.2
Beaver	3.7	0.7	81.8	0.3	25.0
Athabasca	5.0	0.7	47.8	0.3	44.4
Leduc	8.8	0.6	60.0	0.4	56.2
Minburn	7.1	0.6	71.4	0.4	75.0
Lamont*	7.0	0.6	54.0	0.4	100.0
Sturgeon	7.5	0.5	95.2	0.5	71.4
Strathcona	16.0	0.3	56.0	0.7	136.0
Average	**6.3**	**0.7**	**64.5**	**0.3**	**46.1**
Peace Region					
Fairview	2.6	1.0	92.9	0.0	N/A
Clear Hills	9.9	1.0	100.0	0.0	N/A
Spirit River	11.2*	1.0	75.0	0.0	0.0
Smoky River	7.0*	1.0	100.0	0.0	0.0
Birch Hills	6.4	1.0	100.0	0.0	0.0

County/MD	Average Parcel Size (ha)	Proportion of 1st Parcels per Ag SBDVs	1st Parcels out on better Ag Land[a] (%)	Proportion of 2nd, 3rd, 4th, etc. parcels per Ag SBDVs	2nd, 3rd, etc Parcels on better Ag Land (%)
Saddle Hills	9.8*	0.9	N/A	0.1	N/A
Mackenzie	3.2	0.9	96.1	0.1	N/A
Peace	2.4	0.7	100.0	0.3	N/A
Grande Prairie	7.9	0.6	[illegible]	0.4	N/A
Average	**6.6**	**0.9**	**94.9**	**0.1**	**0.0**

Shading based on LFI (Table 3)	[illegible]	MEDIUM (4 – 6)	LOW (7 – 10)

a – of the agricultural land taken out in 1997 and 1998, the proportion of better agricultural land that was removed. Based on either the municipalities' definition of better ag land or , where no definition exists, based on a Land Capability rating of 1 to 3, or a Farm Assessment Rating of 40% or better; c – no rating was reported.

*One 30 ha parcel - CR
*One 37 ha parcel – CR
*One 35.7 ha parcel - CR
} boosted panel size up

›Camrose – no first parcel out information provided. Used farmstead separation to indicate first parcel's activity

*Lamont: 5 20 first parcels on agricultural land have no CLI or FAR rating (25%)

Φ - Clearwater – amount of better quality Ag land taken out underestimated because a range of FAR (farm assessment ratings were given for each subdivision. An average was taken which quite often brought the quality to below 40%, cutting out the better quality land.

Multi Parcel Out Activities

In the South and Central agricultural regions, where the phone survey indicated greater development pressure, higher impact municipalities tend to allow more parcels to be subdivided from a quarter section (Table 4). The correlation between higher impact municipalities and multi-parcel subdivisions is less strong in the North and Peace regions. In total, 2500 ha of agricultural land was subdivided through multi-parcel activity (400 ha, 700ha, 1250ha and 167 ha in the South, Central, North and Peace regions, respectively). This is about one third of the amount of land subdivided as first parcels. Approximately 33% of the 2500 ha converted from agriculture to multi-parcel subdivisions were from better quality land.

Given that over two-thirds of municipal plans have policies which do not allow for more than one parcel per quarter of agricultural land, the amount of high quality land converted to multi parcel activities is a concern. Adherence to agricultural policies laid out in municipal plans is a key component of agricultural land preservation.

Parcel Size Controls

The size of parcels that can be subdivided from agricultural land is one tool that municipalities can use to minimize the impact development on the agriculture industry. Most municipal policies restrict parcel size to ten acres (4.04ha) or less when it comes to subdividing agricultural land. However, in practice, the data shows that subdivided parcels often exceeded ten acres where policies state that "all buildings, structures and improvements should be included in the parcel taken."

County/MD	Average Parcel Size (ha)	Proportion of 1st Parcels per Ag SBDVs	1st Parcels out on better Ag Land[a] (%)	Proportion of 2nd, 3rd, 4th, etc. parcels per Ag SBDVs	2nd, 3rd, etc Parcels on better Ag Land (%)
Special Area #4	3.2	1.0	95.0	0.0	0.0
ClearwaterΦ	8.7	0.8	26.0	0.2	11.5
Ponoka	5.8	0.8	83.0	0.2	17.0
Kneehill	4.6	0.8	N/A	0.2	N/A
Red Deer	11.3	0.7	[illegible]	[illegible]	[illegible]
Lacombe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bighorn	5.0	[illegible]	[illegible]	0.3	N/A
Rockyview	4.9	[illegible]	[illegible]	0.4	[illegible]
Minburn	3.9	0.6	67.0	0.4	60.0
Average	**5.2**	**0.8**	**71.9**	**0.2**	**17.4**
North Region					
Camrose→	7.1	0.9	N/A	N/A	N/A
Two Hills	6.7	1.0	N/A	N/A	N/A
Provost	4.5	1.0	100.0	0.0	0.0
Barrhead	4.0	1.0	60.0	0.0	100.0
Smoky Lake	4.6	0.9	N/A	0.1	N/A
Wainwright	5.7	0.9	62.5	0.1	N/A
Wetaskiwin	5.5	0.7	63.2	0.1	27.3
Bonnyville	5.3	0.8	N/A	0.2	N/A
Westlock	5.0	0.8	53.1	0.2	0.0
Lac Ste. Anne	3.6	0.8	40.9	0.2	25.0
Thorhild	5.8	0.8	85.7	0.2	50.0
Vermilion River	8.1	0.6	N/A	0.3	N/A
St. Paul	6.6	0.7	40.9	0.3	12.5
Parkland	4.8	0.7	60.0	0.3	22.2
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Minburn	7.1	0.6	71.4	0.4	75.0
Lamont*	7.0	0.6	54.0	0.4	100.0
Sturgeon	17.5	0.5	[illegible]	0.5	[illegible]
Strathcona	16.0	0.3	[illegible]	0.7	[illegible]
Average	**6.3**	**0.7**	**64.5**	**0.3**	**46.1**
Peace Region					
Fairview	2.6	1.0	92.9	0.0	N/A
Clear Hills	9.9	1.0	100.0	0.0	N/A
Spirit River	11.2*	1.0	75.0	0.0	0.0
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Mackenzie	3.2	0.9	96.1	0.1	N/A
Peace	2.4	0.7	100.0	0.3	N/A
Grande Prairie	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Average	**6.6**	**0.9**	**94.9**	**0.1**	**0.0**

Shading based on LFI (Table 3)	■	MEDIUM (4 – 6)	LOW (7 – 10)

a – of the agricultural land taken out in 1997 and 1998, the proportion of better agricultural land that was removed. Based on either the municipalities' definition of better ag land or , where no definition exists, based on a Land Capability rating of 1 to 3, or a Farm Assessment Rating of 40% or better; c – no rating was reported.

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Appeals on Subdivision Decisions

Appeals on subdivision rulings tended to occur in the higher impact municipalities (Table 5). Applicants either appealed the conditions placed on the approval or objected to an initial ruling that refused the application. On average, 72% of the appeals were upheld, thereby overruling Council decisions and allowing subdivisions to go through.

During collection of subdivision data, it was noted that subdivision authorities (Development Officers or planning agencies) would make recommendations based on municipal plans and policies however, in many cases the recommendations were over-ruled by the Appeal Board.

Table 5. Appeals on Subdivision Rulings in the Selected Municipalities

County/MD	No. of Appeals	Appeals Denied	Appeals Upheld
South Region			
Ranchland	No Subdivisions Allowed		
Foothills (incomplete)	N/A	N/A	[illegible]
Willow Creek	0	-	-
Wheatland	0	-	-
Taber	0	-	-
Newell	0	-	-
Cypress	0	-	-
Cardston	0	-	-
Forty Mile	0	-	-
Vulcan	0	-	-
Warner	1	-	1
Pincher Creek	1	[illegible]	[illegible]
Lethbridge	6	4	2
Central Region			
Rockyview*	N/A	-	-
Starland	-	-	-
Stettler	0	-	-
Special Area #2	0	-	-
Special Area #3	0	-	-
Special Area #4	0	-	-
Paintearth	0	-	-
Kneehill	0	-	-
Bighorn	0	-	-
Clearwater**	3	3	0
Red Deer	4	0	4
Mountain View	6	0	6
Lacombe	7	2	5
Ponoka	14	5	9
North Region			
Lamont	N/A	N/A	N/A
Barrhead	0	-	-
Lac Ste. Anne	0	-	-
Provost	0	-	-
St. Paul	0	-	-
Smoky Lake	0	-	-
Thorhild	0	-	-
Two Hills	0	-	-
Athabasca	1	-	1

Table 5. **Appeals on Subdivision Rulings in the Selected Municipalities**

County/MD	No. of Appeals	Appeals Denied	Appeals Upheld
	South Region		
Ranchland	No Subdivisions Allowed		
Foothills (incomplete)	**N/A**	**N/A**	**N/A**
Willow Creek	0	-	-
Wheatland	0	-	-
Taber	0	-	-
Newell	**0**	**-**	**-**
Cypress	0	-	-
Cardston	0	-	-
Forty Mile	0	-	-
Vulcan	0	-	-
Warner	1	-	1
Pincher Creek	**1**	**-**	**1**
Lethbridge	**6**	**4**	**2**
	Central Region		
Rockyview*	**N/A**	**-**	**-**
Starland	-	-	-
Stettler	0	-	-
Special Area #2	0	-	-
Special Area #3	0	-	-
Special Area #4	0	-	-
Paintearth	0	-	-
Kneehill	0	-	-
Bighorn	**0**	**-**	**-**
Clearwater**	3	3	0
Red Deer	**4**	**0**	**4**
Mountain View	**6**	**0**	**6**
Lacombe	**7**	**2**	**5**
Ponoka	14	5	9
	North Region		
Lamont	N/A	N/A	N/A
Barrhead	0	-	-
Lac Ste. Anne	0	-	-
Provost	0	-	-
St. Paul	0	-	-
Smoky Lake	0	-	-
Thorhild	0	-	-
Two Hills	0	-	-
Athabasca	1	-	1

County/MD	No. of Appeals	Appeals Denied	Appeals Upheld
Minburn	1	1	-
Wainwright	1	N/A	N/A
Wetaskiwin	1	Unknown	Unknown
Beaver	2	N/A	N/A
Bonnyville	2	2	-
Vermilion River	2	2	-
Westlock****	2	1	-
Camrose	4	4	-
Strathcona	8	5	3
Leduc***	9	2	5
Parkland	19	[illegible]	15
Sturgeon*****	28	2	26
Peace Region			
Smoky River	N/A	N/A	N/A
Peace	0	-	-
Fairview	0	-	-
Clear Hills	0	-	-
Birch Hills	0	-	-
Spirit River	1	-	1
Saddle Hills******	1	-	1
East Peace	1	N/A	N/A
Mackenzie	3	N/A	N/A
Grande Prairie	8	2	6
Shading based on LFI (Table 3)	HIGH ([illegible])	MEDIUM (4 – 6)	LOW (7 – 10)

* Rockyview – information on appeals not included

** Clearwater – defeated subdivision applications assumed to be appealed

*** Leduc - two appeals still pending, one partially upheld

**** Westlock - one appeal unknown result

***** Sturgeon - from the spring of 1996 to the spring of 1998, subdivision appeals were inflated due to a suspension of planning documents held up in an appeal process.

****** Saddle Hills – went through with rezoning

County/MD	No. of Appeals	Appeals Denied	Appeals Upheld
Minburn	1	1	-
Wainwright	1	N/A	N/A
Wetaskiwin	1	Unknown	Unknown
Beaver	2	N/A	N/A
Bonnyville	2	2	-
Vermilion River	2	2	-
Westlock****	2	1	-
Camrose	4	4	-
Strathcona	[illegible]	[illegible]	[illegible]
Leduc***	[illegible]	[illegible]	[illegible]
Parkland	[illegible]	[illegible]	[illegible]
Sturgeon*****	[illegible]	[illegible]	[illegible]
Peace Region			
Smoky River	N/A	N/A	N/A
Peace	0	-	-
Fairview	0	-	-
Clear Hills	0	-	-
Birch Hills	0	-	-
Spirit River	1	-	1
Saddle Hills******	1	-	1
East Peace	1	N/A	N/A
Mackenzie	3	N/A	N/A
Grande Prairie	[illegible]	[illegible]	[illegible]
Shading based on LFI (Table 3)	■	MEDIUM (4 – 6)	LOW (7 – 10)

* Rockyview – information on appeals not included

** Clearwater – defeated subdivision applications assumed to be appealed

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**** Westlock - one appeal unknown result

***** Sturgeon - from the spring of 1996 to the spring of 1998, subdivision appeals were inflated due to a suspension of planning documents held up in an appeal process.

****** Saddle Hills – went through with rezoning

ILO Development Permit Analysis

Intensive livestock development activity over the two-year period tended to be greater in the high and medium impact municipalities than in low impact municipalities. Typically, the average number of ILO development permits was three to five times greater in the high impact municipalities (Table 6). An exception was the Peace region, which had only two percent of the total ILO development permit activity. Also, municipalities like Bighorn and Clearwater in the Central region, and Minburn, Parkland and Provost in the North region, ranked relatively high in the LFI index but had no ILO development activity, indicating that subdivision activity is likely the primary cause of their development pressures.

The majority of the 471 ILO development permit applications across the province were approved, with an average of 93% for 'higher' (high and medium impact municipalities - LFI of 1 to 6) and 94% for lower impact areas. The appeal rate on ILO development decisions was similar: 16% for the higher impact and 12% for the lower impact areas. However, municipalities such as Vulcan and Forty Mile had only three applications and only one appeal, making it difficult to draw conclusions about representative appeal rates.

Table 6. Intensive Livestock Development Permit (DP) Acitivity.

County	Total DP Applications	Total DPs Approved Before Appeals	Total DPs Refused	Total DPs Appealed	Total DPs Approved After Appeals
South Region					
Ranchland	0	0	0	0	0
Forty Mile	3	3	0	1	3
Vulcan	3	2	1	1	2
Cypress	4	4	0	3	4
Pincher Creek	4	4	0	0	4
Cardston	5	5	0	0	5
Warner	7*	7	0	0	7
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Foothills	12	10	2	2	10
Taber	14	11	3	3	13
Willow Creek	23	19	4	4	20
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Totals	**162**	**142**	**20**	**24**	**149**
Central Region					
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Clearwater	1	1	0	0	1
Special Area 3	1	1	0	0	1
Special Area 4	2	2	0	0	2
Paintearth	3	3	0	0	3
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Special Area 2	4	4	0	0	4
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Stettler	12	12	0	0	12
Starland	14	13	1	2	13
Ponoka	19	18	1	10	18
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Totals	**166**	**164**	**2**	**22**	**162**

North Region					
Minburn					
Parkland	0	0	0	0	0
Provost	0	0	0	0	0
Smoky Lake	0	0	0	0	0
Thorhild	0	0	0	0	0
Lamont	1	1	0	1	1
St. Paul	1	1	0	0	1
Lac St. Anne	2	2	0	1	2
Two Hills	2	2	0	0	2
Athtabasca	4	4	0	0	4
Flagstaff	4	4	0	0	4
Wainwright	4	4	0	0	4
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vermilion River	6	6	0	1	6
Beaver	8	8	0	2	8
Wetaskiwin	8	7	1	3	7
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Westlock	15	15	0	0	15
Camrose	16**	16	0	0	16
Barrhead	19	18	1	2	17
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Totals	132	124	5	15	124
Peace Region					
Clear Hills	0	0	0	0	0
East Peace****	0	0	0	0	0
Mackenzie	0	0	0	0	0
Peace	0	0	0	0	0
Birch Hills	1	1	0	0	1
Fairview	1	1	0	1	1
Saddle Hills	2*****	2	0	0	2
Smoky River	2	2	0	0	2
Spirit River	2	2	0	0	2
Grande [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	11	10	1	3	11
Grand Total	471	440	28	64	446
Average	8.26	7.72	0.49	1.12	7.82

Shading based on LFI (Table 3)	[illegible]	MED (4 – 6)	LOW (7 – 10)

Table 6. Intensive Livestock Development Permit (DP) Acitivity.

County	Total DP Applications	Total DPs Approved Before Appeals	Total DPs Refused	Total DPs Appealed	Total DPs Approved After Appeals
South Region					
Ranchland	**0**	0	0	0	0
Forty Mile	**3**	3	0	1	3
Vulcan	**3**	2	1	1	2
Cypress	**4**	4	0	3	4
Pincher Creek	**4**	4	0	0	4
Cardston	**5**	5	0	0	5
Warner	**7***	7	0	0	7
Newell	**8**	8	0	0	8
Foothills	**12**	10	2	2	10
Taber	**14**	11	3	3	13
Willow Creek	**23**	19	4	4	20
Lethbridge	[illegible]	69	[illegible]	[illegible]	[illegible]
Totals	**162**	**142**	**20**	**24**	**149**
Central Region					
Bighorn	[illegible]	0	[illegible]	[illegible]	[illegible]
Clearwater	**1**	1	0	0	1
Special Area 3	**1**	1	0	0	1
Special Area 4	**2**	2	0	0	2
Paintearth	**3**	3	0	0	3
Mountainview	**4**	4	0	0	4
Special Area 2	**4**	4	0	0	4
Rockyview	**12**	12	0	0	[illegible]
Stettler	**12**	12	0	0	12
Starland	**14**	13	1	2	13
Ponoka	**19**	18	1	10	18
Red Deer	**23**	23	0	0	23
Lacombe	**31**	31	0	7	31
Kneehill	**40**	40	0	3	38
Totals	**166**	**164**	**2**	**22**	**162**

North Region					
Minburn					
Parkland	**0**	0	0	0	0
Provost	**0**	0	0	0	0
Smoky Lake	**0**	0	0	0	0
Thorhild	**0**	0	0	0	0
Lamont	**1**	1	0	1	1
St. Paul	**1**	1	0	0	1
Lac St. Anne	**2**	2	0	1	2
Two Hills	**2**	2	0	0	2
Athtabasca	**4**	4	0	0	4
Flagstaff	**4**	4	0	0	4
Wainwright	**4**	4	0	0	4
Strathcona	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vermilion River	**6**	6	0	1	6
Beaver	**8**	8	0	2	8
Wetaskiwin	**8**	7	1	3	7
Leduc	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Westlock	**15**	15	0	0	15
Camrose	**16****	16	0	0	16
Barrhead	**19**	18	1	2	17
Sturgeon	25	21	1	1	[illegible]
Totals	**132**	**124**	**5**	**15**	**124**
Peace Region					
Clear Hills	**0**	0	0	0	0
East Peace****	**0**	0	0	0	0
Mackenzie	**0**	0	0	0	0
Peace	**0**	0	0	0	0
Birch Hills	**1**	1	0	0	1
Fairview	**1**	1	0	1	1
Saddle Hills	**2*******	2	0	0	2
Smoky River	**2**	2	0	0	2
Spirit River	**2**	2	0	0	2
Grande Prairie	3	2	1	2	[illegible]
Total	**11**	**10**	**1**	**3**	**11**
Grand Total	**471**	**440**	**28**	**64**	**446**
Average	**8.26**	**7.72**	**0.49**	**1.12**	**7.82**

Shading based on LFI (Table 3)	HIGH (1 – 3)	MED (4 – 6)	LOW (7 – 10)

* Five ILO operations were included under one development permit
** One development application corresponds to a 'hen barn and farrow to finish barn
*** Two applied for not indicated if approved or refused, and one cancelled
**** One development permit issued for an 'ILO-farm shop'
***** Includes an 'elk handling facility'.

Four hundred and seventy one ILO development permit applications were submitted to the municipalities during the study period. The applications were categorized into groups based on the type of livestock operation (Table 7). They were also placed into broad categories, based on whether the application was for a new ILO or expansion of an existing ILO. Of the 471 applications, approximately 60% were for new operations and 40% were to expand or replace existing ILOs. Half the applications for new ILOs (49.7%) were for swine operations. Conversely, most of the applications for expansion of existing ILOs were for cattle operations (38.5%), with nearly 71% of the requests in the County of Lethbridge.

Table 7. Types of Intensive Livestock Operations Applied for in Selected Municipalities for 1997 and 1998

County	General[a]		Swine[d]		Cattle[e]		Poultry[f]		Dairy		Horses		Other[g]	
	Exp[b]	New[c]	Exp	New	Exp	New	Exp	New	Exp	New	Exp	New	Exp	New
Athabasca			1		2	1								
Barrhead			5	4	1	1	2	1	4	1				
Beaver	6	2												
Bighorn	-*	-	-	-	-	-	-	-	-	-	-	-	-	-
Birch Hills		1												
Camrose			1	6+ 1****		1	2	4+ 1****		1				
Cardston			3						1	1				
Clear Hills	-*	-	-	-	-	-	-	-	-	-	-	-	-	-
Clearwater		1												
Cypress			3			1								
East Peace**														
Fairview				1										
Flagstaff				3						1				
Foothills	1	7		2	2									
Forty Mile				2						1				
Grande Prairie				2			1							
Kneehill		2	3	15	9	3		7		1				
Lacombe			3	13				6		9				
Lac Ste Anne				1	1									
Lamont						1								
Leduc				2			3	1	4					1
Lethbridge	2		3	8	51	5	4	1	3	3				
Mackenzie	-*	-	-	-	-	-	-	-	-	-	-	-	-	-
Minburn	-*	-	-	-	-	-	-	-	-	-	-	-	-	-
Mountainview						1			1	2				
Newell	4	4												

Paintearth			1	2										
Parkland	-*	-	-	-	-	-	-	-	-	-	-	-	-	-
Peace	-*	-	-	-	-	-	-	-	-	-	-	-	-	-
Pincher Creek	4													
Ponoka			1	11		1		2	2	2				
Provost	-*	-	-	-	-	-	-	-	-	-	-	-	-	-
Ranchland	-*	-	-	-	-	-	-	-	-	-	-	-	-	-
Red Deer	4	1	2	10	1			1		4				
Rockyview				2		3		2				4		1
Saddle Hills				1										1
St. Paul		1												
Smoky Lake	-*	-	-	-	-	-	-	-	-		-	-	-	-
Smoky River				2										
Special Area 2				2		1								1^h
Special Area 3			1											
Special Area 4		1		1										
Spirit River				2										
Starland	2	1	2	5										4^h
Stettler			1^R	8					1	1				1^h
Strathcona							$2+1^R$	2	1					
Sturgeon			5	3			$5+1^R$	8	1				1	1
Taber				4		9		1						
Thorhild	-*	-	-	-	-	-	-	-	-	-	-	-	-	-
Two Hills			1		1									
Vermilion River	1	3	1	1										
Vulcan				2	1									
Wainwright				4										
Warner			5	* 3**	1			* 1**		* 1**				
Westlock			2	10		2			1					
Wetaskiwin				2		1		2	1	2				
Willow Creek	2		5	7	2	5	1	1						

a - no indication of the kind of livestock given
b - expansion of an existing ilo
c - development of a new ilo
d - includes farrow-finish, farrow-wean and feeders
e - beef feedlot
f - includes broilers, breeders, layers and turkey broilers; R = Replacement
g - includes all others, sheep etc.
h - manure disposal

* Municipality had zero ILO development permits
** East Peace – ILO – farm shop
*** ILC operations included under one development permit
*** two ILO operations were included under DP "hen barn and farrow to finish operation"

Appeals on initial ILO decisions were made on both approved and refused applications (Table 8). Of the 471 applications received by the municipalities, 440 (93%) were initially approved. Sixty-four (13%) initial decisions for ILO development applications were appealed. Of the 64 appeals, 45 had been originally approved and 19 had been refused by the municipal subdivision authorities.

Based on the information that the municipalities provided, we were unable to determine who appealed the approval and why (Table 8). Where there were appeals on applications that had been refused initially, the appellant was the applicant in all cases. Where approved operations were appealed, 89% of the appeals were made by adjacent landowners. Where a neighbour appeal the initial decision, farm neighbors (including other ILO operators) were the appellants in 42% of the cases.

Thirteen appeals were heard on environmental or quality of life concerns (Table 8). In all cases the appeals were denied, many on the basis that the proposed developments complied with the Code of Practice For Safe and Economic Handling of Animal Manure. Seven applicants appealed their approvals on the basis of the conditions set out in the approvals. In two cases the Appeal Boards relaxed conditions despite neighbour complaints, while two other cases were denied. Nineteen developments that were initially refused by the municipalities were appealed by the applicants. In fourteen of these cases, the Appeal Boards overturned the initial decision and the other five were denied. Four of the decisions that were occurred in the County of Lethbridge, as the result of waiving the MDS on three grandfathered operations and increased Minimum Distance Separation on the other.

In 40 of the 64 cases that were appealed, the Councils' original decisions were upheld. In eighteen of the cases, the original decisions were overturned on appeal. Of the 44 application approvals that were appealed, only seven of the appeals were upheld. Of the appeals on applications that were originally refused, 40% were denied and 55% were upheld. Overall, 63% of all appeals were denied, indicating that in most cases, the Appeal Boards are supporting the Development Authority's original decision.

Table 8. Appeals of ILO Development Permits in Selected Municipalities for 1997 and 1998.

County	Initial Decision	Type of ILO Operations	Appellant	Appeal Upheld (U) or Denied (D)	Final Decision	Commetns – why it was appealed, reasons upheld or denied
Barrhead	Approved	New swine operation	Unknown	D	Approved	Meets bylaw and Code of Practice
	Approved	New swine operations	Acreage neighbours	U	Refused	Does not meet bylaw
Beaver	Approved	New ILO	Farm neighbours	D	Approved	
	Approved	ILO expansion	Farm neighbours	D	Approvals	
Cypress	Approved	Swine expansion	Highway commercial	D	Approved	MDS
	Approved	Swine expansion	Farm neighbours	D	Approved	MDS
	Approved	New cattle operations	Farm neighbours	D	Approved	MDS
Fairview	Approved	New swine operations		D	Approved	Appealed because of odours
Foothills	Refused	New ILO	Applicant & acreage neighbour	U	Approved	Change made to comply with LUB
	Approved	New ILO	Farm & acreage neighbour	U	Refused	Because of concerns of neighbours and non-compliance with LUB
Forty Mile	Approved	New swine operation	Farm & acreage neighbours	U	Approved	Farm and acreage owners concerned about odour; denied because meets Code of Practice
Grande Prairie	Approved	New swine operation	Applicant	D	Approved	Applicant appealed on the condition that manure had to be injected
	Refused	New swine operation	Applicant	U	Approved	N/A
Kneehill	Approved	Cattle expansion	EA	U	Refused	

	Approved	New swine operation	EA	U	Refused	
	Approved	New swine operation		Appeal withdrawn		
Lacombe	Approved	New swine operation	Neighbours	D	Approved	Groundwater, poor practices in past, lack of land
	Approved	New swine operation		Application withdrawn		Neighbours concerned about water supply, groundwater contamination, odours, roads, diseases
	Approved	Swine expansion	Neighbours	D	Approved	Increased odour problem, land may be getting saturated with manure
	Approved	New swine operation	Neighbours	D	Approved	Pollute watercourse which is a source of water for their cattle
	Approved	New swine operation	Neighbours	D	Approved	Pollute watercourse which is a source of water for their cattle
	Approved	New swine operation	Neighbours	D	Approved	Concern with odours
	Approved	New dairy operation	Applicant	D	Approved	Appeal conditions
Lac Ste. Anne	Approved	New swine operation	Farm neighbours	D	Approved	
Lamont	Approved	Cattle expansion	Residents	D	Approved	Hamlet of St. Michael residents
Leduc	Approved	New swine operation	Applicant	U	Approved	Applicant appealed conditions; upheld despite neighbours complaints
	Approved	Dairy expansion	Applicant	D	Approved	Applicant appealed conditions
Lethbridge	Approved	Cattle expansion	Applicant	U	Approved	Appealed conditions

	Approved	Cattle expansion	Neighbours	D	Approved	Appealed on basis of quality of life; denied because it meets Minimum Distance Separation (MDS) and Code of Practice
	Approved	Cattle expansion	Neighbours	D	Approved	Environmental concerns; denied because it meets MDS and Code of Practice
	Approved	New swine operation	Neighbours	D	Approved	Environmental concerns; denied because it meets MDS and Code of Practice
	Refused	Cattle expansion	Applicant	D	Refused	Doesn't meet MDS
	Refused	Existing swine operation	Applicant	U	Approved	Grandfather situation; waived MDS
	Refused	Expansion of others	Applicant	D	Refused	Proximity to Picture Butte
	Refused	Swine expansion	Applicant	U	Approved	Grandfather situation; waived MDS
	Refused	Cattle expansion	Applicant	U	Approved	Added conditions; waived MDS
	Refused	Cattle expansion	Applicant	U	Approved	Added conditions and increased MDS
Ponoka	Approved	New poultry operation	Acreage neighbours	D	Approved	
	Approved	New cattle operation	Neighbours	D	Approved	
	Approved	New swine operation	ILO neighbours	D	Approved	
	Approved	New swine operation	ILO neighbours	D	Approved	
	Approved	New swine operation	ILO neighbour	D	Approved	
	Approved	New swine operation	ILO neighbour	D	Approved	
	Approved	New swine operation	Neighbours	D	Approved	

	Approved	New poultry operation	ILO neighbours	D	Approved	
	Approved	Swine expansion	ILO neighbours	D	Approved	
	Refused	New swine operation	Applicant	U	Refused	Insufficient land base
Starland	Approved	New swine operation	Neighbours	D	Approved	Environmental concerns by neighbours
	Approved	Manure disposal	N/A	N/A		N/A
Strathcona	Refused	New poultry operation	Applicant	D	Refused	
	Refused	New poultry operation	Applicant	U	Approved	
Sturgeon	Approved	Expansion of other	Farm neighbours	D	Approved	
Taber	Refused	New swine operation	Applicant	U	Approved	Conditions of approval
	Refused	New swine operation	Applicant	U	Approved	Conditions of approval
	Refused	New poultry operation	Applicant	D	Refused	No land base and too close to irrigation
Vermilion River	Approved	New swine operation	Farm neighbours	D	Approved	Meets all standards – approved
Vulcan	Refused	New swine operation	Applicant	D	Refused	Environmental concerns
Wetaskiwin	Refused	New poultry operations	Applicant	D	Refused	Did not meet minimum setbacks
	Approved	New swine operation	Urban neighbours	D	Approved	Complies with bylaw, no objection from adjacent landowners, no valid planning concerns for neighbouring hamlet
	Approved	New swine operation	EA	Application withdrawn		
Willow Creek	Refused	ILO expansion		Withdrawn		

	Refused	Cattle expansion	Applicant & neighbour & urban neighbours	U	Approved	Concerns over water supply, dust; did not meet MDS
	Approved	New swine operation	Applicant & ILO & acreage neighbour	Partly upheld; partly denied	Approved	Development adheres to bylaw; developer will adhere to Code of Practice
	Refused	New swine operation	Applicant & ILO neighbours	D	Refused	Does not comply with bylaws

No Appeals for:

Athabasca
Bighorn
Birch Hills
Camrose
Cardston
Clear Hills
Clearwater
East Peace
Flagstaff
Mackenzie
Minburn
Mountainview
Newell
Paintearth
Parkland
Peace
Pincher Creek
Provost
Ranchland
Red Deer
Rockyview
Saddle Hills
St. Paul
Smoky Lake
Smoky River
Special Area 2
Special Area 3
Special Area 4
Spirit River
Stettler
Thorhild
Two Hills
Wainwright
Warner
Westlock

2.4.3 Scan of Municipal Land Use Policies

The Municipal Development Plans (MDPs) and Land Use Bylaws (LUBs) from thirty-six municipalities were scanned and categorized according to their policy approaches to protecting or converting agricultural land.

Importance of Agriculture to Rural Municipalities

All municipalities recognize the importance of agricultural lands in their municipal development plans. Most plans can be summarized as follows:

- Ten percent of the MDP addresses agricultural land conservation and minimizing land use conflicts, while
- Ninety percent of the MDP consists of policies and criteria to accommodate non-agricultural uses in the rural area.

Although agriculture was identified as a primary activity and the protection of agricultural land was a common thread throughout the plans examined, the need for non-agricultural development was also recognized in order to keep the rural communities alive. The M.D. of Bonnyville's municipal plan is indicative of most municipalities attempt to balance development and agricultural land preservation. Its statement of intent is "to protect and enhance the municipality's valuable agricultural land resource, the agri-based economy and the rural lifestyle, while still accommodating appropriate non-agricultural uses."

Agriculture-Related Policy Components

In order to conserve agricultural land, the basic policy direction for most rural municipalities is to direct non-agricultural land uses away from better agricultural lands. In general, agricultural lands or areas dominated by agricultural uses. The effectiveness of this approach depends strongly on the way municipalities define agricultural land and the criteria they establish for identifying better quality agricultural lands.

Not every municipality attempts to define what agricultural land is (See Appendix C.1 and C.2 for a summarized description of definitions). Ten of the MDPs scanned do not have a definition for agricultural land, while six others define it by historical use or suitability. More than two-thirds of the plans that were scanned attempt to identify better agricultural lands by following a class rating of one to three (Canada Land Inventory Rating - CLI), or a farmland assessment rating of 40% or better. Other plans classify better agricultural lands as having a land capability rating of CLI one to four, or a farmland assessment rating greater than 28%.

First Parcel Out Policies

When the Planning Act was integrated into the Municipal Government Act, municipalities were given the task of addressing policies on first, and subsequent, parcels out within their Municipal Development Plans. A summary of these policies is given in Appendix C.3 and C.4. Three rural municipalities have no classification system and six have no restrictions on the number of parcels that can be subdivided from agricultural land. Bighorn, Foothills, Mountainview and St. Paul all have either a medium to high impact LFI rating, yet they have little or no policy on first parcels out, and leave subdivision decisions to Council's discretion.

First Parcels Out on Developed Sites

On developed sites (previously unsubdivided quarters on which farmsteads or other residences exist), almost half of the municipal plans reviewed stated that a subdivision was mandatory if certain criteria were met (see Appendix C.3/C.4 for individual municipal policies). Many plans indicated that subdivision approval was discretionary and used criteria similar to the following for decision-making:

1. That parcels be kept as small as possible but still contain buildings, structures and improvements;
2. That subdivisions conform with access, sewage, facilities and development regulations;
3. That the subdivided parcel does not conflict with existing or adjacent future land uses.

As stated in Part 2.2 of this Section, many municipalities allow subdivisions to occur without understanding the intent of the *Agricultural Operations Practices Act* (AOPA). The AOPA states that generally accepted farming activities are allowed to continue regardless of whether the municipal land use bylaw changes; the land switches ownership; someone else takes over the operation; or the land use next to the operation changes. The third decision criteria above, "that the subdivided parcel not conflict with existing or adjacent future land uses," is open for interpretation and needs to be based on substantial long-range, comprehensive planning rather than what is happening in the area at the time that a decision is being made.

First Parcels Out on Undeveloped Sites

Twenty-nine of the plans (over two-thirds) address the subdivision of an undeveloped site as a first parcel out (Appendix C.3/C.4). Approximately 30% of the plans state that approval is mandatory, while 60% state that allowing first parcels on undeveloped sites is discretionary (subdivision authority advises Council). Whether policies are mandatory or discretionary, frequent criteria for deciding whether the subdivisions should proceed are:

- poorer quality land
- adverse impact to adjacent land uses
- suitable building site, and,
- proper access and site servicing.

Again, the second policy in the above list can be difficult for a Council to interpret or predict without some long-term planning. Given the increases in land use conflicts over the last five to ten years, clearer criteria are needed to make balanced land use decisions for the long-term.

Eighty Acre Splits

Most municipalities discourage or do not allow 80 acre splits. Approximately 16% of the municipalities use 80 acre splits from a quarter section as a first parcel option (Appendix C.3/C.4). The most common criteria for deciding whether the subdivisions from an 80 acre split should proceed are:

- exclusion of cultivated land
- suitable access
- fragmentation
- original parcel contains at least 64.7 hectares (160 acres)

Allowing a first parcel to be removed from an 80 acre split or other smaller legal title is seen by some as a 'slippery slope' that eventually leads to serious fragmentation of the farmland base[17]. Once a quarter is fragmented, policy changes frequently allow for further subdivision and fragmentation to occur (Appendix C.1/C.2).

Maximum Number of Non-Agriculture Parcels

Over ninety percent of the municipal plans state how many non-farm parcels (single parcels for residential purposes) can be subdivided from a previously non-subdivided quarter section (Appendix C.3/C.4). Most municipalities allow only one. Approximately 25% of the plans reviewed provide for two or more under special circumstances (for example, under irrigation or if the second is a farmstead from a previously subdivided quarter). Only six municipalities have policies related to better agricultural lands.

Municipal Government Act and Land Use Policies

The Municipal Government Act states that:

- The Lieutenant Governor in Council may by order, on the recommendation of the Minister, establish land use policies (S622(1)),
- Every statutory plan, land use bylaw and action undertaken pursuant to this part by a municipality, municipal planning commission, subdivision authority, development authority or subdivision and development appeal board or the Municipal Government Board must be consistent with the land use policies (S622(3).

Recognizing a need for and the importance of consistent municipal and provincial planning approaches, the Province established the Provincial Land Use Policies in 1996 (O.C. 522/96).

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[17] Harvey Buckley, President, Action for Agriculture, personal communication.

The Provincial Land Use Policies state the following goal and policies for agriculture:

Goal:

> To contribute to the maintenance and diversification of Alberta's agricultural industry.

Policies:

1. Municipalities are encouraged to identify, in consultation with Alberta Agriculture, Food and Rural Development, areas where agricultural activities, including intensive and extensive agricultural and associated activities, should be the primary land use;
2. Municipalities are encouraged to limit the fragmentation of agricultural lands and their premature conversion to other uses, especially within the agricultural areas identified in accordance with policy No. 1;
3. Where possible, municipalities are encouraged to direct non-agricultural development to areas where such development will not constrain agricultural activities;
4. Municipalities are encouraged to minimize conflicts between intensive agricultural operations and incompatible land uses through the use of reciprocal setback distances (i.e. Minimum Distance Separation method from the Code of Practice for the Safe and Economic Handling of Animal Manure) and other mitigative measures.

Policy No. 1 - Areas of Agricultural Activity as the Primary Land Use

A summary of how municipalities address this policy is given in Appendix C.5. Over one-third of the plans contain 'policy maps' that identify 'agricultural' areas as part of an overall municipal land use concept. Various names are used for the maps – Future Land Use, Land Use Concept, District, Policy District or Agricultural Areas. In these cases, the maps are specifically referred to in the text of the plan. The remaining municipal development plans have general policies that refer to agriculture as the predominant land use or to agricultural areas being predominant within the municipality.

Within their land use bylaws (LUBs), all municipalities assign at least one land use district where agriculture is the primary use. Extensive agricultural activities are considered as permitted uses. With few exceptions, intensive livestock operations are listed as a discretionary use. Other forms of intensive agriculture (e.g. greenhouses, market gardens, nurseries, etc.) may be permitted uses but most often are listed as discretionary uses. The 'general' agricultural district covers most of the municipality, except where areas have been specifically designated to accommodate other forms of land use.

Almost half of the MDPs that were scanned identify more than one 'agricultural district or zone' where agriculture is designated as the primary activity. The districts differ in the types of activities allowed on agricultural lands. For example, in addition to the general rural/agricultural district, other agricultural districts relate to locations in proximity to urban areas and shorelands, or areas with lower soil capability. They also include districts specifically for intensive agricultural operations, or to control larger parcel agricultural subdivisions or accommodate more of a balance of uses, most often residential. In some cases these areas are designated as agricultural/country residential.

The elected municipal officials and the Development Officers that were surveyed identified a need for clearer provincial guidelines that would create definitions of agriculture lands, and criteria for prioritizing land uses relative to agriculture. In addition, they would like assistance in locating primary uses for agriculture, i.e. the 'best use' areas for agriculture within their municipalities.

Policy No. 2 - Limiting the Premature Conversion of Agricultural Land

The general approaches to the second agricultural policy, i.e. encouraging municipalities to limit fragmentation and premature conversion of agricultural land to other uses, are shown in Appendix C.5. All plans, whether as statements of purpose, goals or policies, identify a desire to maintain the agricultural resource and agricultural activities as the predominant use within the municipality. Typical phrases in the municipal plans indicating this intent include:

- Maintain agricultural land base
- Discourage incompatible land uses
- Prime use is agriculture
- Conversion to non-ag land uses avoided
- Leadership in conservation of agriculture
- Protect existing agriculture areas
- Will wherever possible be preserved for agriculture
- Conserve, for the most part for agriculture
- Minimize fragmentation
- Protect all districted ag lands for agriculture
- Ensure continued agricultural viability
- Preserve large blocks of land for agriculture
- Agriculture uses will be primary

As seen in the use of phrases such as 'wherever possible', 'prime use' and, 'for the most part', municipal development plans recognize that, while agriculture may be the primary use in 'districted' areas, it is not the only use. Based on the land use analysis in Section 2.5.2, some municipalities have had difficulty limiting fragmentation and premature conversion of agricultural land in the face of increasing residential subdivision pressure.

Policy No. 3 - Directions for Non-Agricultural Uses

Policy No. 3 advises municipalities to direct non-agricultural development to places where it will not constrain agricultural activities. As stated earlier, plans recognize the importance of agricultural land and the protection of the agriculture industry. However, the majority of Municipal Development Plans also address other types of land uses that can be accommodated in agricultural areas (Appendix C.6). Examples of policies that conserve agricultural land or protect agricultural operations but still accommodate non-agricultural uses, include:

- Consideration of conversion of agricultural land to other uses - the impact on existing and potential agricultural use of the property and in the vicinity will be considered (Foothills; LFI 4)
- Non-agricultural land uses may be allowed in the 'Rural Area' (Grande Prairie; LFI 5)
- Creation of new parcels of land for non-agricultural purposes will be considered on their own merits having need to protect the viability of agricultural operations (Mountainview; LFI 3)
- Subdivision of rural land for non-agricultural activities shall not create conflicts with existing agricultural operations; conversion to non-agricultural uses should be avoided whenever alternate courses of action are available (Newell; LFI 3)
- Other uses may be considered in the Agricultural Policy Area subject to compatibility with agricultural operations (Strathcona; LFI 1)
- The purpose of this district (agricultural) is to maintain and preserve better agricultural land for productive agricultural uses, unless it is clearly in the greater public interest to allow the land to be lost (Camrose; LFI 5)
- Consider a need for alternate (non-agricultural) uses when the need can be clearly demonstrated (Red Deer; LFI 3)
- Because conflicts may arise between farm and non-farm landowners, land with a low agricultural assessment rating will not be automatically rezoned for agricultural use (Ponoka; LFI 4)
- Predominantly unsubdivided areas with an agricultural land use designation hold the lowest potential for future non-agricultural development; concentrated areas of designated and subdivided lands hold the highest potential for non-agricultural subdivision and development (Rockyview; LFI 1)
- Other uses may also be permitted on a discretionary basis provided that development will not adversely affect the agricultural community (Vermilion River; LFI 7)
- Non-agricultural uses should be directed to lands of poorer quality (Clearwater LFI 5)
- Shall be avoided on high capability agricultural land unless the County is convinced that the land use or subdivision could not reasonably locate elsewhere in the County on lands of low capability and provides benefits to the County and general public to the extent necessary to warrant the removal of high capability agricultural lands from production (Leduc; LFI 3)

Rural municipal approaches to land use show a range of land use districts for the purpose of accommodating activities other than agriculture. MDP policies set out conditions to be considered in accommodating these land uses or direct them to certain areas in order to minimize constraints on agriculture. The policy examples above and summarized in Appendix C.6 indicate the range of approaches taken by municipalities. The policies noted above are identified with the LFI rating from Section 2.5.2 for each municipality.

Policy No. 4 - Siting of Intensive Livestock Operations – Setback Provisions

To minimize conflicts between intensive livestock operations (ILOs) and other land uses, the Provincial Land Use Policies encourage the use of setbacks as established through the Minimum Distance Separation (MDS) in the Code of Practice for the Safe and Economic Handling of Livestock Manure. Appendix C.6 summarizes how rural development plans and/or land use bylaws follow this policy guide.

In municipalities where there is ILO development, the policy for reciprocal setbacks using MDS is addressed as follows:

- **Shall** be used in 16 municipalities
- **Should** be used in 3 municipalities
- Not mentioned in 6 municipalities
- **Shall/may** be used in 1 municipality (shall where close to urban, grouped country residential or community uses)
- **Shall** be considered in 7 municipalities
- **'Is supported'** in 3 municipalities

Reciprocal Protection for Intensive Livestock Operations

As shown in Appendix C.6, six municipal plans are silent on reciprocal setbacks. The policy addresses location of land uses incompatible with ILOs. In two other municipal plans, the policy is only implied. Of the 24 that clearly address reciprocal setbacks through the use of MDS, the policy is addressed as follows:

- **shall** be used in 17 municipalities
- **shall** be considered in 3 municipalities
- **may** be used in 3 municipalities
- **should** be used in 1 municipality

Two-thirds of the municipalities scanned have provisions for reciprocal setback protection for ILOs. Only 75% of these have a mandatory provision.

3.0 Current Farmland Protection Policies in Alberta

Although much of the responsibility for conserving farm and ranch land rests with rural and urban municipalities in Alberta, through their land use planning systems, the province's *Municipal Government Act* provides a legislative framework. This framework includes the Provincial Land Use Policies that were developed in 1996 (see section 2.5). In addition to the land use policies, the province has also enacted Right to Farm legislation and a system of preferential tax assessment whereby farmland is assessed on the basis of its productive value for agricultural purposes, rather than at market value.

Sections 3.1 through 3.4 summarize the current approach to protecting farmland in Alberta.

3.1 Legislative Framework

The British North America Act vests Canada's provinces with broad powers to regulate land use in the public interest.[18] A similar situation exists in the United States. Traditionally these provincial and state governments have given the responsibility for local planning to regional, municipal and county governments. However, where land use issues have been of supra-local importance or where local decision-making has failed to uphold public interests, some provinces and states have reclaimed these powers.

3.2 Land Use Planning

Municipal councils face difficult choices when it comes to making land use decisions. Many municipalities have seen their revenue base decrease during the past 10 to 15 years, they know that they cannot rely solely on tax revenue from farmland. As a result, there is added pressure to accommodate new industrial and commercial activities, and to allow more country residential (CR) development. The challenge is to find a balance between development and preservation of farmland and open space.

The second chapter of Planning Law and Practice in Alberta, by Frederick A. Laux, Q.C., Professor of Law at the University of Alberta,[19] provides a very good overview of Alberta's current land use planning system. The following information is taken from Laux:

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[18] Owen J. Fureseth and J.T. Pierce. A Comparative Analysis of Farmland Preservation Programmes in North America. Canadian Geographer, XXVI, 3, 1982.

[19] Frederick A. Laux. Planning Law and Protection in Alberta. Second Edition. October, 1996.

> In May, 1995, Alberta's Planning Act (1977) was repealed and parts of it were reenacted as part 17 of the new Municipal Government Act. The most significant changes in legislation were the elimination of regional planning and abolition of the Alberta Planning Board. The work that the Planning Board and regional commissions had been doing became a responsibility of local government bodies.
>
> Part 17 of the Municipal Government Act is concerned with the planning for, and regulation of, development of land in Alberta. Part 17 creates the public authorities and delegates to them and others that exist through other legislation, the tasks deemed necessary for effective planning and regulation. It also provides for a number of planning and regulatory instruments and calls on the planning and regulatory agencies to prepare and adopt the instruments through which land development is ultimately controlled.

Professor Laux draws an interesting analogy by saying that "the Municipal Government Act provides the carpenters, gives them the tools and sets the general parameters for what they may build. The end product depends upon the imagination, skills and energies of the carpenters – the planning agencies."

> As a result of the changes that occurred in the mid-1990s, all planning power is now exercised either at the provincial or local levels, but mainly the latter.
>
> One of the land use planning powers retained by the province is that the Lieutenant Governor in Council can prescribe provincial land use policies, which are to govern all other actions taken and decisions made by the planning bodies. The Lieutenant Governor in Council can also prescribe application, processing procedures and substantive rules for the subdivision and development of land.
>
> At the local level, Municipal Councils have been given the power (a) to establish and appoint a "subdivision authority" (which may be made up of all or part of its membership) to receive, process and decide on subdivision approval applications; (b) to establish and appoint a "development authority" to address development permit applications and enforce planning rules; (c) to establish a municipal planning commission and its powers and procedures; (d) to establish and appoint members to a subdivision and appeal board; (e) to work with neighboring municipalities to adopt an intermunicipal development plan; and (g) to adopt a municipal plan, area structure and area redevelopment plans, and a land use bylaw for the municipality.
>
> The objective for the planning process is to achieve the use and development of land in a manner that is as consistent with evolving societal values as possible. The most dominant of these values are (1) to secure the safe use of land with the least amount of potential degradation of the environment, (2) to secure the use of all land so as to minimize the negative impact on neighboring lands, (3) to secure the most cost-effective use of land from the point of view of municipal

> infrastructure, and (4) to recognize and give effect to the public interest element in private land use decisions, but not at the undue expense of private property rights.

Professor Laux explains that the instruments that either may or must be adopted under the Municipal Government Act are hierarchical.

> At the apex are those that reflect provincial goals and objectives. In the middle are the intermunicipal development plans, if any, adopted by neighboring municipalities. Next are the local plans and at the bottom is the land use bylaw for the municipality. This is the instrument through which plans are translated into detailed regulations. Through its textual passages, land use bylaw creates a number of categories that describe which land uses are permitted as a right within a particular district and which are permitted through administrative discretion.

3.3 Right-to-Farm Law

Every Canadian province has right-to-farm legislation. Although most of the provinces have developed recommended industry standards, generally expressed as guidelines, codes of practice or accepted practices, New Brunswick is the only one that is regulating "accepted practices."[20]. The determination of whether a farmer is following accepted practices is delegated in most provinces to an appointed board or tribunal. Some provinces have the courts make the final decision.

It is interesting to note that accepted agricultural practices do not necessarily mean a "standard of care" has been followed or that the practices being followed reflect what a reasonable person would do under the circumstances. From a legal perspective, accepted agricultural practices set out as guidelines or codes of practice may prove to be problematic because what is acceptable can vary according to context, granting tribunals and the courts.[21]

As previously noted in Section 1.3, Alberta's version of right-to-farm legislation was enacted in 1987 as the *Agriculture Operation Practices Act* (AOPA). The AOPA is designed to protect Alberta farmers and ranchers from nuisance claims. It was amended in 2000, upon proclamation of Bill 202, the *Farming Practices Statutes Amendment Act*. This new legislation further enhances the nuisance protection sections of the AOPA by broadening the definition of what constitutes a nuisance by farm operations.

AOPA was amended in December 2001. The amendments allow the Minister to establish review committees to determine if producers are using acceptable farming practices if written complaints are filed with the Minister. The review committees have three members. Two of the members must have experience in the type of farm operation that is the subject of the complaint and the third is a non-aligned representative. The committee can try and resolve the complaint between the parties. However, if they can't, the committee can still rule whether the practice in question is an acceptable agricultural practice.

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[20] New Brunswick's draft legislation states that a farmer must be following "acceptable farm practices" and be "in conformity with standards set out in the regulations". Therefore, they are currently defining acceptable farm practices for the regulations.

[21] Jonathan J. Kalmakoff. "The Right-to-farm": A Survey of Farm Practices Protection Legislation in Canada

The legislation does not prevent individuals from taking court action to resolve a nuisance issue. However, it specifies that prior to proceeding to court the complainant must submit their written request for a review to the minister at least 90 working days prior to commencing an action.

3.4 Preferential Assessment of Farmland

Like most Canadian provinces and American states, Alberta provides a system of preferential tax assessment on farmland. Land that is used in the business of farming is assessed on its productive or current use value, instead of its market value. However, as noted in a 1991 report for the government of British Columbia notes that:

> "Virtually every jurisdiction in North America has adopted some form of preferential property treatment for agricultural land; preservation of farmland is usually a principal reason given for granting such preference; but by itself, it does not work." [22]

The authors went on to say "whatever preferential taxes might be achieving, they are not preserving farmland from urban encroachment." Property taxes, which are typically about one percent of the assessed value of farmland, are not a major factor in determining farm viability. In fact, the authors of the study stated that *"financial incentives to encourage farming can never be large enough to stall the trend to redevelopment by themselves."*

An MLA Committee is currently reviewing the way in which farm property is assessed in Alberta. It is anticipated that farmland will continue to be assessed on the basis of its productive value.

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[22] B.C. government, Evaluating Preferential Tax Treatment for Agriculture and Rural Revitalization; Julian Greenwood and Jennifer A. Whybrow; Ministries of Finance and Corporate Relations and Municipal Affairs, Recreation and Culture.

4.0 The U.S. Approach to Farmland Protection

The U.S. has a much longer track record than Canada in responding to concerns about fragmentation of the rural land base and loss and fragmentation of farmlands and open spaces. It has targeted more resources toward studying and addressing these issues. Examining the U.S. situation, and their policy provisions may provide some insight into what we might do differently to begin to address Alberta's land use issues.

4.1 U.S. Federal Government Support

The U.S. federal government's efforts to stem farmland conversion began with passage of the Farmland Protection Policy Act in 1981.[23] Since then, land use and farmland protection have become central issues in public policy debates across the U.S.. At least 19 states have now adopted some type of statewide growth management law, and eight states have established task forces to try to slow the rate at which farmland is being lost to other types of development.

While there is some debate about whether loss of farmland in the U.S. is really significant, statistics show that from 1992 through 1997, nearly 16 million acres of farmland, forest and open spaces were converted to urban and other uses. This is an average of 3.2 million acres per year - more than twice the rate of 1.4 million acres per year that were converted between 1982 and 1992. States with the highest rates of conversion include California, Florida, Georgia, Michigan, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee and Texas.

These figures have caught the attention of Vice President Gore who stated that:

> "Although it is generally agreed that the conversion of agricultural land does not threaten America's food supply, haphazard development patterns result in fragmentation of the farmland base, loss of family farms that raise fresh produce for urban markets and the elimination of vital open spaces."

In response, the Administration established a Farmland Protection Program (FPP) through the United States Department of Agriculture. Its initial budget of $35 million was targeted at providing resources to state and local governments to enter into voluntary agreements with farmers to preserve farmland. The FPP has been very popular and has succeeded in leveraging both state and local funds. For a federal investment of about $275 per acre, the FPP has provided permanent protection to over 127,000 acres of

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[23] Robert M. Word. The U.S. Farmland Protection Policy Act: Another Case of Benign Neglect. Land Use Policy; January, 1991

America's best farmland.[24] Because the demand for matching grants has exceeded supply by 900 percent, only 19 states have been able to participate. The FPP has recently been re-authorized at $55 million per year through 2002. Conservation nonprofit organizations, including land trusts and wildlife organizations in all 50 states are allowed to apply for matching grants to protect prime farmland.

In 1996 two U.S. Congressional representatives, from California and Maryland, founded the Congressional Farmland Protection Caucus. Its purpose is to keep members of Congress informed about the nation's loss of prime and unique farmland and to provide a forum to develop policies in defense of the nation's best and most threatened agricultural lands. To date, the caucus has a bipartisan membership of 19. It has been instrumental in obtaining changes in the FPP to maximize the state and local farmland protection program goals.

In the last few years, the U.S. Administration has also been a solid supporter of America's Smart Growth movement.

The Smart Growth Network's website[25] states that "in communities across the nation, there is a growing concern that current development patterns – dominated by what some call "sprawl" – are no longer in the long-term interest of our cities, existing suburbs, small towns, rural communities, or wilderness areas. Though supportive of growth, communities are questioning the economic costs of abandoning infrastructure in the city, only to rebuild it further out. They are questioning the social costs of the mismatch between new employment locations in the suburbs and the available work force in the city. They are questioning the wisdom of abandoning "brownfields" in older communities, eating up the open space and prime agricultural lands at the suburban fringe, and polluting the air of an entire region by driving farther to get places. Spurring the smart growth movement are demographic shifts, a strong environmental ethic, increased fiscal concerns, and more nuance views of growth. The result is both a new demand and a new opportunity for smart growth."

Many of the states have now implemented some form of Smart Growth programming.

4.2 State Initiatives to Protect Farmland and Open Spaces

Over the years, American states have adopted or developed a number of policies and programs aimed at limiting the amount of farm and ranch land, and open spaces that are lost to development. This section of the report provides a brief synopsis of these policies and programs.

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[24] January 7, 2000 Press Release From The American Farmland Trust, Washington, D.C.

[25] Source: http://www.smartgrowth.org

4.2.1 Right-to-Farm Laws

In his presentation to the 1997 Educational Conference of the American Agricultural Law Association, Professor Neil Hamilton, Drake University,[26] stated that "in recent decades right-to-farm laws have been one of the most popular forms of pro-agriculture legislation enacted." He went on to say that:

> "They have been the subject of numerous and frequent commentaries in agricultural law literature. Most lawyers and farmers have more than a passing familiarity with the legal concept upon which the laws were originally based, i.e. existing farm operations should not become nuisances due to later development of non-agricultural uses in the surrounding area."

Between 1963, when Kansas enacted legislation to protect feedlot owners from litigation, and 1994, when Utah included right-to-farm protection in its agriculture district law, every state has enacted some form of right-to-farm law under the State Civil Code of Statutes.[27] U.S. right-to-farm laws fall into six general categories[28]:

(1) traditional, or those that protect farming operations that existed prior to residential encroachment;
(2) laws which are based on Accepted Agricultural Practices;
(3) those that list specific protected agricultural activities;
(4) those that require the creation of agricultural districts;
(5) those that offer protection from local government ordinances; and
(6) those that protect feedlots.

Although the primary goal of right-to-farm legislation has been to protect farmers from common-law nuisance actions, a secondary and equally important goal in the U.S. over the last few years has been to also provide farmers with protection from restrictive municipal by-laws. Several states have recently amended, or are in the process of amending, their legislation to include such protection. In fact, as of 1996, there were 23 right-to-farm laws in the U.S. that prohibited local governments from enacting ordinances that would impose restrictions on agriculture.[29]

It is worth noting that nuisance provisions in the states are generally found under a general nuisance or general agricultural statute, although some of the states have stand-alone legislation.[30] Also, several states now have two types of right-to-farm legislation; Minnesota and Iowa have three.[31]

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[26] Prof. Neil D. Hamilton; Director, Agricultural Law Center, Drake University

[27] Saving American Farmland: What Works. American Farmland Trust; 1997.

[28] Can You Get Along Without Right-to-farm? Jesse H. Richardson, Jr. Department of Urban Affairs and Planning; Virginia Tech, Blacksburg, Virginia; 1999.

[29] Saving American Farmland: What Works. American Farmland Trust; 1997.

[30] A Review of "Right-to-farm" Legislation in Canada and the U.S.. New Brunswick Department of Agriculture

[31] American Farmland Trust; Right-to-farm Description Laws

4.2.2 Preferential Assessment Laws

One of the most common forms of state policy to try to retain land in agricultural production has been through preferential assessment of farmland. Such laws are enacted by the state, but implemented at the local level. The cost of the program is generally borne at the local level.

The original objective in implementing preferential assessment was to ensure that agriculture remains economically viable and to keep farmland in agriculture production. Preferential assessment law has also been effective in correcting inequities in the property tax system. Without such law, owners of farmland would pay a disproportionately high amount of property taxes relative to the cost of servicing farmland.

4.2.3 Circuit Breaker Tax Credits

Circuit breaker tax programs offer credits to offset farmers' property tax bills. Only Michigan, Wisconsin, New York and Iowa offer tax credits through circuit breaker programs. The first three of these states provide farmers with state income tax credits, based on the amount of their property tax bill and their income. Michigan requires that farmers sign a ten-year restrictive agreement with their local government to prevent farmland conversion. Wisconsin requires counties and towns to adopt plans and enact agricultural land protection zoning to ensure that tax credits are targeted to productive land. This has resulted in more than 400 local jurisdictions now having such zoning. In Iowa, farmers receive school tax credits from their local governments when school taxes exceed a statutory limit. The local governments are then reimbursed by the state.

4.2.4 Critical Area Approach

Increasing awareness of the failure of preferential assessment policies to protect farmland from development has resulted in a search for other, more productive approaches. The critical area concept grew out of the idea that the state should take back some of the land use authority that has historically been delegated to local governments. It involves state designation of "areas of critical state concern." The state exercises supervisory jurisdiction over the content of local regulation of the use of lands so designated. Although the concept has mostly been used for areas of major public investment or areas having a significant impact on historical, natural or environmental resources of state wide or regional importance, it has had some limited use in protecting important farmlands.

British Columbia's farmland protection project, started in 1973, fits this approach. Programs in Hawaii and Oregon also have some features in common with the critical area approach. California considered a critical area approach in the mid-70s but it never received state senate approval. Where the critical area approach has been used for farmland protection, prerequisites are the designation of important farmlands, state-mandated and locally imposed restrictions on the use of these lands and state review of local restrictions.

4.2.5 Agricultural District Laws

Agriculture district laws enable farmers to voluntarily form special areas where commercial agriculture is encouraged and protected. Authorization occurs at the state level while implementation occurs locally. In most states, enrollment within an agricultural district provides eligibility for preference assessment, protection from eminent domain and municipal taxation, enhanced right-to-farm protection, exemption from special tax assessments and eligibility for state conservation easement programs.[32]

Farmers who want to form a district apply directly to their local government. Applications are reviewed, approved at the local level and then given final approval by the state. In some states, a local government must have a farmland and agriculture plan in place before farmers can apply to form a district. Agriculture district laws offer benefits to farmers for keeping their land in agriculture, as an alternative to using regulatory strategies.

4.2.6 Purchase of Agricultural Conservation Easement and Purchase of Development Rights Programs

In 1981, the National Conference of Commissioners on Uniform State Laws adopted the *Uniform Conservation Easement Act*. It serves as a model for state legislation that allows qualified public agencies and private conservation organizations to accept, acquire and hold less-than-fee-simple interests in land for conservation and preservation purposes. Since 1981, 21 states have adopted conservation easement legislation based on this model. While every state has conservation easement laws, some have either enacted their own laws or given state agencies the power to hold title to easements within their authorizing legislation.

Agricultural conservation easements are designed to protect farmland. The landowner continues to be eligible for any federal or state farm program for which they qualified prior to entering into a farmland conservation agreement. The easements restrict the land to specific uses and protect it from development. Although most farm conservation easements are permanent, they may be for a specified length of time. Enrolled land stays on the tax roll but the farmer who donates his land is eligible for certain tax benefits.

Programs for the Purchase of Development Rights (PDRs) are also commonly referred to in the U.S. as Purchase of Agricultural Conservation Easements (PACE) Programs. PDRs or PACE programs pay farmers to protect their land from development. They sell a conservation easement to a government agency or private conservation organization, generally receiving the difference between the value of the land for agriculture production and its value for residential or commercial development. In some states, PACE programs have been implemented, funded and administered by state agencies, while in other states legislation allows local governments to create their own PACE programs. In a few cases, local governments have created independent PACE programs without any state action.

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[32] The Farmland Protection Toolbox; American Farmland Trust; Fact Sheet; September, 1998.

A few states have appropriated money for use by local governments and private non-profit organizations while other states have worked cooperatively with local governments to purchase easements. This allows the state to create broad policies or criteria and local government to determine which farms to protect and which land to monitor once the easements are in place.

The major advantages of a PACE program are that it:

- provides the farmer with an alternative to outright sale of his land,
- can be used to protect large contiguous blocks of high quality farmland for future generations of farmers, and
- can facilitate transfer of the land from one generation to the next since the future market value of the land has been reduced.

A downside is that PACE requires substantial funding to provide farmland protection, although it is also a way to share the cost of protection between a community and its farmers.

It is noteworthy that over the last decade, PACE programs in the U.S. have expanded by 340% in acres and 360% in expenditures.

4.2.7 Growth Management Laws and Urban Growth Boundaries

Growth management laws are designed to control the timing and phasing of urban growth and to determine the types of land use that will be permitted at local and regional levels. They direct local governments to identify lands with high resource value and protect them from development. They regulate the pattern and rate of development and set policies ensuring most new development occurs within designated boundaries. In some cases, public utilities, schools, etc. must be in place before any new development is approved. More than a dozen states have laws to control development or set planning standards for local governments, seven of which address the issue of farmland conversion.

Urban Growth Boundaries (UGBs) establish lines around urban areas to encourage development within the boundaries and to discourage it outside.
UGBs are a key component of Oregon's Growth Management Law (see Section 6.1.4). Several California counties and a few other jurisdictions have also adopted UGBs, but not without controversy.

Proponents claim that UGBs reduce the costs of public services by promoting efficient land use and extension of infrastructure, encourage redevelopment of central cities, and preserve farm and forest land in rural areas. The City of Portland has also claimed it was able to keep its residential values relatively low as a result of using UGBs. Recent data indicates that that is no longer the case. Portland's housing prices have risen dramatically in the last few years as a result of its policies. Critics note that Portland's UGBs have not expanded sufficiently and have driven up land and housing costs and encouraged leapfrog development into rural areas outside the boundaries.

4.3 Local Government Initiatives to Protect Farmland and Open Spaces

4.3.1 Right-to-Farm Ordinances

In many states across the U.S., local governments are enacting their own right-to-farm laws to strengthen state laws. Local right-to-farm ordinances can serve as formal policy statements that agriculture is a valuable part of the county or area. In some cases, the local law requires that a notice be placed on the deed to all properties in the agriculture area, cautioning potential buyers that they may experience noises, smells and other inconveniences from neighboring farms.

4.3.2 Agriculture Zoning Ordinances

Zoning is probably the most common form of local government land use control in the U.S.. Zoning ordinances segregate a geographic region into areas devoted to specific land uses (Use Districts) and established standards and densities for development. Agricultural zoning designates areas where farming is the primary land use and places limits on other uses. In some cases, any land use that may be incompatible with commercial farming operations is prohibited. Agricultural Zoning ordinances usually restrict the density of residential development. In some cases, the ordinances contain right-to-farm provisions and can require farmers in an agricultural zone to prepare farm management plans. Agricultural zoning is generally most appropriate where there is limited residential development, large amounts of contiguous prime or unique agricultural land and limited growth pressure. The major benefit of agricultural zoning is that it keeps large tracts of farmland relatively free from development and reduces the likelihood of conflicts between farm and non-farm neighbors. It also limits land speculation, thereby keeping land more affordable for farming.

4.3.3 Cluster Zoning Ordinances

Conventional country residential developments generally subdivided an entire parcel of land into lots of two, three or more acres. In some jurisdictions, cluster development has occurred as a means of allowing housing development and the retention of farmland or open space. Local ordinances for cluster zoning require that houses be grouped close together on relatively small lots to preserve as much open land as possible. Typically, the land that has been protected from development is owned by a homeowners' association or by the developer. Where land remains for agricultural production, a lease arrangement is formed between the homeowners' association or developer and a farmer in the area.

A couple of northeastern states have taken a slightly different approach to cluster development. They have used Open Space Zoning and land use planning to strive for a balance between growth and farmland/open space protection. Their approach requires houses and commercial buildings to be clustered at higher densities than under conventional local zoning ordinances. It also requires that no more than half of the existing farmland or open space is lost to a development. As a result, only the smallest amount of land, and the least productive land, is developed.

4.3.4 Transfer of Development Rights

Transfer of Development Rights (TDR) programs allow landowners to transfer the right to develop a parcel of land to a different parcel. TDRs are generally established through local zoning ordinances. The purpose is to protect farmland by shifting future development from agricultural areas (sending areas) to other areas that have been targeted for growth (receiving areas). The protected parcel has a covenant or easement placed upon it.

TDRs are different than PDRs (Purchase of Development Rights) or PACE (Purchase of Agricultural Conservation Easement) programs since they involve the private market. Most TDR transactions are between private landowners and developers. Local governments approve transactions and monitor easements. In areas designated as receiving areas, developers are permitted to build at a higher density than ordinarily allowed through base zoning.

Similar to PACE, TDRs have the potential to prevent non-agricultural development of farmland, reduce the market value of protected farms and provide owners of protected farms with the capital to enhance their farm's viability. TDRs also offer a potential solution to the political and legal problems that communities can face if they restrict development of farmland. Down-zoning, in combination with TDRs, enables landowners to retain their equity in the land by selling their development rights.

4.3.5 Comprehensive Planning

Also known as master or general plans, comprehensive planning allows counties, cities, towns and villages to create a vision or blueprint for their **joint** future. Comprehensive plans outline local government policies, objectives and guidelines and they target areas for a variety of different land uses. They provide a rationale for zoning and promote the orderly development of public services.

Comprehensive plans can serve as the foundation for a local farmland protection strategy by identifying areas to be protected for agriculture and areas for development. In some counties, comprehensive planning has been used to encourage the establishment of urban growth boundaries and zoning for agricultural protection.

4.4 Pros and Cons of Various Policies and Programs

4.4.1 Right-to-Farm Legislation

There have been few court challenges to right-to-farm, however, rulings on recent U.S. cases raise doubts as to how effective right-to-farm laws may be in future. For example, in 1998 in *Bormann v. Board of Supervisors of Kossuth County, Iowa,* 584 N.W. 2d 309, the Iowa Supreme Court held that under the Fifth Amendment of the U.S. Constitution, the right-to-farm law constituted an unlawful taking of private property from the neighbor of the farmer, for public purposes, without just compensation. Under Iowa law, a farm or farm operation located in an officially designated "agricultural area" does not constitute a nuisance, regardless of the date the operation was established or the date of any subsequent expansion. In this case, the farmer had applied to the Board of Supervisors and received approval to include his land and that of several neighbors in an agricultural area. Iowa law says the right to maintain a nuisance suit in an easement entitles the owner of the easement to use or enjoy land in the possession of another. Therefore, the Court found that by taking this easement from the neighboring landowners, the State had essentially "physically invaded" the neighbors property. Since there was no compensation provided, the Court found that the right-to-farm law was invalid.

In February 1999, in response to a separate situation involving hog production in Iowa, the U.S. Supreme Court refused to hear an appeal of a lower court ruling that threw out Iowa's right-to-farm law. The Supreme Court ruled that "allowing farming operations to reduce the enjoyment of other nearby landowners was a commandeering of valuable property rights without compensating the owners and sacrificing those rights for the economic advantage of a few."

Still another case occurred in Washington state n 1998. In *Buchanan v. Simplot Feeders Limited Partnership and IBP*, the judicial opinions of the Supreme Court of Washington (134 Wash, 2d 673, 952 P.2d 610 (1998) and the United States District Court for the Eastern District of Washington were involved. Since 1960, when the Buchanan family purchased the farm, a feedlot had been expanded to cover 580 acres, holding an estimated 40,000 head of cattle. Over time, both IBP and Simplot had gained ownership of the feedlot. Then, in 1998, the Buchanans filed suit against IBP and Simplot over a proliferation of manure, dust, flies and odors. In this case, however, both courts found that Washington State's *Right-to-Farm Act* only applied to nuisance suits arising from "subsequent **non**-agricultural development" filed by a person or persons engaged in a "**non**-agricultural activity". Since the Buchanans were farmers, the legislation did not apply. The Supreme Court of Washington also found that the state's *Right-to-Farm Act* gave the protected farm a "quasi-easement against urban developments to continue those activities."

In the opinions of individuals who have followed right-to-farm legislation and have monitored legal challenges to such legislation, these cases "continue a trend to weaken right-to-farm".[33] They have growing doubts about the legal validity of right-to-farm laws and advise farm operators to consider whether they are the proper vehicle to protect farming operations from residential encroachment. They also state that farm operators need to approach possible nuisance actions pro-actively.

Neil Hamilton, professor of Agricultural Law at Drake University, has observed that:

> "the use of right-to-farm legislation to prevent non-farm operations from moving into and challenging the very existence of an indigenous agricultural operation can be a valid attempt to preserve farms and farmland and a way of insuring fundamental fairness. However, to be effective, right-to-farm laws require a reallocation of property rights - or at least of societal priorities.[34]

He stated that, "if the special protection afforded under right-to-farm law only works by limiting the rights of others, there will most likely be constant challenge to the laws." The professor also noted,

> "there is some irony in this situation, inasmuch as farmers and farm groups have been the main proponents of both private property rights and of right-to-farm protection. Any legal challenges to the constitutionality of right-to-farm laws, based on the infringement of the property rights of neighboring landowners, will likely result in these farmers or farm groups having to try to reconcile irreconcilable political viewpoints."

4.4.2 Development Rights

Since participation in a TDR (Transfer of Development Rights) program is voluntary, generally involves a financial transaction between a developer and a landowner, and consequently does not require public funding, it has enjoyed considerable success in many U.S. states. After observing or learning about this apparent success, there have been numerous calls for TDR programs in Canada. There may be merit in Alberta making use of TDRs and/or PDRs (Purchase of Development Rights), especially in those areas where there is a high level of urban development pressure. In 1999, Alberta Justice investigated the legal aspects of both TDRs and PDRs. The following is a summation of its response:

"The constitutional reason that TDR and PDR programs have been popular in the U.S. does not exist in Canada. The Fifth and Fourteenth Amendments to the U.S. *Bill of Rights* prohibit taking of private property for public use without providing just compensation. U.S. courts have interpreted this as meaning that when development or use of a property is so restricted that the landowner is deprived of a reasonable return on the property, the property has effectively been "taken" by the government without

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[33] The Performance of State Programs for Farmland Retention; National Research Conference Proceedings, September, 1998, Columbus Ohio.

[34] Prof. Neil D. Hamilton; Agricultural Law Center, Drake University; 1997

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compensation. The line between what is acceptable down zoning and a constitutionally prohibited taking is murky. There is always a danger that when a municipality down zones a piece of property it may be required to pay compensation. This danger is the driving force behind the development of TDRs in the U.S.

In Canada, there is no constitutional protection for property. The Alberta Bill of Rights does, however, declare that every individual has the right to the "enjoyment of property and the right not to be deprived thereof except by due process of law." The Alberta Court has held that this right does not lead to a right to compensation for down zoning of a piece of property. Therefore, there is no constitutional reason for implementing a TDR program in Canada, as there is in the U.S.. Canadian municipalities can simply zone or rezone an area to have limited development.

At the same time, there is no legal reason why TDRs and PDRs cannot be used in Canada. TDRs are primarily a zoning tool. In Alberta, the authority to zone has been given to the municipalities under the *Municipal Government Act*. The decision to use a particular tool and how it is to be used is a municipal responsibility. Although the province could amend the MGA to give municipalities the PDR tool, it is probably not a prerequisite. The requirement within the MGA for each municipality to pass a "land use bylaw" that "may prohibit or regulate and control the use and development of land and buildings in a municipality" may be sufficient authority."

In the U.S, however, local governments that have implemented PDRs without specific state authority have faced legal challenges. As a result, more and more states have moved to expressly authorize municipalities to implement such programs. In Arizona, for example, state legislation that is equivalent to Section 640 of Alberta's MGA includes the authority to establish the procedures, methods and standards for a TDR program and establishes statutory requirements.

U.S. experience shows actual TDR plans are, by necessity, quite complex. Several difficult issues must be addressed such as the identification of sending and receiving areas, the amount of density or use that can be transferred, and the valuation of development rights. The greatest difference between a PDR program and a TDR program is that public funds are required for the purchase of development rights. Under a PDR program, the government compensates the landowner for down zoning. PDRs raise some of the same legal issues as TDRs, however, PDRs are less complex because there is no need to create a receiving zone. Development rights are simply purchased by the government and the land retired from future development. Even though municipalities may already have the authority to purchase development rights, it may be prudent to grant them express power if such a program is to be implemented.

A major limitation of PDRs and TDRs is the funding required. Most jurisdictions that have used these tools have only been able to secure small areas because of limited funds.

4.4.3 Urban Growth Boundaries

As reported by the Reason Public Policy Institute[35](RPPI), UGBs can achieve goals such as encouraging higher residential densities and in-fill, but these outcomes have a cost. If an UGB is successful it will place constraints on vacant land and force development onto more expensive land and smaller lots. As is evident in Portland, Oregon, UGBs can also push up the cost of homes within the boundary. The RPPI would like to see alternative, market based approaches to manage urban growth. It suggests that "zoning ordinances should be reformed to allow for market determined densities, administrative review of development projects, or the privatization or full-cost pricing for public infrastructure." The RPPI also suggests greater use of voluntary conservation easements and privately funded PDRs. Others suggest that when UGBs are put in place, there also needs to be an outer ring that is a transition, or buffer zone that would accommodate larger sized acreages for at least 20 years.

4.4.4 Zoning Ordinances and Exclusive Agricultural Zoning

This report previously noted that local zoning ordinances have been one of the most commonly used tools in land use decision-making processes, however, the approach has been criticized for being highly politicized.[36] An alternative that has been suggested, and has been in use in some states for more than two decades, is performance zoning. Individuals are allowed to conduct numerous types of activities on their land, regardless of where they live, as long as they mitigate any negative impacts on their neighbors. This approach requires that local governments replace zoning ordinances with regulatory standards, to ensure that any negative effects of proposed development are minimized. Landowners are given greater control of their destinies while the public interest in land use is still protected.

In 1993, a comparison and evaluation of agricultural zoning in British Columbia and Quebec concluded that "the rate of land conversion in both provinces was slower than it would have been without these programs. Overall, BC was more successful than Quebec in steering development onto lower quality lands; BC has exercised its option to allow for outright exclusion from the reserve more often than Quebec….it might be argued that this strategy has allowed Quebec a greater degree of control over the end uses of agricultural land."[37]

Pierce and Sequin identified three factors that have contributed to uncertainty over land use in the exclusive agricultural zones in BC and Quebec.

1. Commission decisions are based on specific criteria, however, those criteria are often not understood by the applicants nor the general public (for example, biophysical rather than economic criteria govern most decisions. But, from an applicant's

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[35] Reason Public Policy Institute; Report Cautions Against "Portlandization" of America; October, 1999.
[36] John A. Charles; Cascade Policy Institute; Portland Oregon. 1999.
[37] Pierce and Sequin, 1993.

perspective non-viability may be the main reason for seeking a change of use or exclusion from the agricultural zone).

2. Even though the legislation in both provinces gives Cabinet final say over rezoning of land, political interference with Commission decisions brings into question the fairness and impartiality of the system.
3. The potential for a change of government every five years and a shift in political philosophies and attitudes toward exclusive agricultural zoning.

4.4.5 More Comprehensive Planning

One of the most common comments or recommendations in land use planning documents and literature concerning farmland protection is the need for jurisdictions to adopt a more comprehensive approach to planning, if they hope to make good long-term land use decisions. A paper entitled, *The Preservation of Agricultural Land in Canada,* makes some points that are no less valid today than when the paper was written almost 25 years ago.[38] One point is,

> "because the preservation of agricultural land depends on patterns of urban growth, the crucial decisions are usually made by urban planners and urban politicians. In order to rationalize the urban and rural competition for agricultural land, it appears necessary to establish a framework of regional planning units with both urban and rural components. The planning process within these urban-centered regions would have both urban and rural viewpoints and employ ecological principles in making land use decisions."

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[38] Krueger, 1976.

5.0 Basic Strategies and Success Factors for Protecting Farmland

Two criteria, political acceptability and land use performance, can be used to measure the success of farmland protection mechanisms. To be politically acceptable, the public and landowners must be convinced that a particular strategy is an effective means of achieving the goal of farmland preservation. Although political support is a prerequisite for program effectiveness, the true test of success is in how well the program has performed. In other words, has the program minimized the loss or fragmentation of the agricultural land base and do current conditions still support continuing agricultural production in the area? Unfortunately, most jurisdictions have little data, other than census data, on which to evaluate the effectiveness of their programs.

The balance of the information in this section of the report comes from work by Furuseth and Pierce[39] in which they identified four basic approaches for protecting farmland in North America. They found that different approaches have different consequences for the protection of farmland.

5.1 Comprehensive-Mandatory Strategy

Comprehensive mandatory polices include a combination of indirect and direct incentives and controls. They include mandatory land use regulations that reduce opportunities for farmland conversion and certain financial incentives for landowners. The public messages from a comprehensive-mandatory approach are: (1) that the state or province wishes to assert supremacy over local interests regarding agricultural land use and (2) that farmland protection is equal to, or has priority over other land use policies. Implementation is both expensive and complex and usually the most difficult to implement, from a political perspective. Common components include exclusive agricultural zoning, preferential assessment and land banking. Oregon, Hawaii, British Columbia, Newfoundland and Quebec use this approach.

5.2 Integrated – Voluntary Strategy

Integrated, voluntary programs also include a combination of direct and indirect actions and policies. Programs center on enabling legislation that permits individuals and local governments to implement regulatory mechanisms and provide financial incentives to landowners. Since participation is voluntary, this approach is much more politically feasible. Common components include differential assessment, agricultural districts, and transfer of development rights. Approximately a dozen states, including Minnesota, Wisconsin, Virginia and Illinois, and the province of Prince Edward Island have taken an integrated-voluntary approach to farmland protection.

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[39] Owen J. Furuseth and J.T. Pierce. A Comparative Analysis of Farmland Preservation Programs in North America. Canadian Geography, XXVI, 3, 1982.

5.3 Indirect-Police Power Strategy

Indirect police power policies rely on traditional land use planning methods and tax relief for farmland protection. Preferential assessment and centralized land use controls are common components, and the protection of high quality farmland is generally one of a number of land use policies. The integrity of divisions between rural and urban designations depends on the willingness of planning staff and boards of supervisors to respect the spirit and letter of the planning regulations. Six provinces, including Alberta, and the state of California use this approach.

5.4 Indirect-Financial Strategy

Indirect financial policies attempt to create a favorable financial climate for agriculture. They typically include preferential assessment policies and transfer of development rights. Because there is a lack of clear-cut goals, farmland protection tends to be weak and haphazard. In many cases, the policies have benefited land developers and speculators as much as they have benefited farmers. Although the indirect-financial approach has been the easiest to enact and is popular with legislators, there has also been a dramatic decrease in the number of states using this approach. No provinces have taken this approach.

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The relative success of these different approaches depends, to some extent, on how important farmland protection is to an individual. Generally speaking, the comprehensive-mandatory approach is viewed as having actually achieved the greatest success in keeping farmland in production, while the indirect-financial approach is seen as ineffective.

Reasons given for the relative success of the comprehensive-mandatory approach are that it improves the economic climate for farm production, contains urban development to a stronger degree than other approaches, and reduces the rate of land conversion. Compared to other jurisdictions, both Oregon and British Columbia have succeeded in these measures. At the same time, however, both jurisdictions have also been the subject of legal challenges aimed at overturning the enabling legislation. The unwillingness of other jurisdictions to adopt a comprehensive-mandatory approach is evidence of real and perceived inequities in this approach. Where other approaches are seen as favoring urban development, this approach is perceived as putting farmland and open space protection first.

The greatest criticism of the integrated-voluntary approach is that agricultural districts fail to provide adequate protection for farmland in areas with the greatest urban growth and development pressures; or in other words, wherever the potential for capital gains on land development is high.[40]

Effectiveness of the indirect-police power approach, which includes Alberta's approach, is compromised by urban bias and failure to assign equal priority to agricultural land. A prime example of this is the Niagara fruit belt in Ontario - once a thriving agricultural area, now largely developed. The ad hoc nature of Ontario's provincial planning process in the 1970s and the residual character of agricultural land are seen as primary contributors to the fruit belt's residential and industrial development, despite the adoption of official plans and guidelines for farmland preservation.

Furuseth and Pierce believe that "stability and continuity are requisite conditions for strong policy actions, and that one of the most significant factors affecting the efficacy of a particular policy approach is coercion. Farmland protection policies that permit individuals or governments to select participation or non-participation severely weaken potential effectiveness. Voluntary participation also sends a message that farmland protection is less important than other mandatory policies and so it may receive less rigor in enforcement and implementation. Farmland protection efforts are weakened whenever large amounts of farmland resources are exempted or where land can be withdrawn from or added to the program because of economic or political conditions at a particular time."

Furuseth and Pierce also see policy composition as an important criterion of program success. They state that "simplistic strategies, which have appeal to legislators because of low decision costs, lack the depth to address the complex economic and social factors affecting land conversion. This is particularly the case for financial incentive programs and regulatory strategies in which farmland protection is added to the 'laundry list' of other planning strategies." In their summation of the success or failure of the four approaches to farmland protection, they state that "the costs and political support necessary to evolve and implement a multi-faceted provincial or state protection policy are, of course, much higher than the simplistic strategies but the difference in effectiveness is considerable."

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[40] W.R. Bryant, Farmland Preservation Alternatives in Semi-Suburban Areas (Ithaca: Cornell University, Department of Agricultural Economics #75-5, 1975), pp.12-13.

6.0 Some Examples of State and Provincial Approaches [illegible] Farmland and Open Space Protection in North A[illegible]

This section provides a brief overview of the approaches that five American states and five provinces have taken to address concerns about loss and fragmentation of the land base. It is not intended to be an exhaustive account of all the initiatives within each of these states and provinces. Rather, it is intended to give the reader a flavor for the general direction that each of these jurisdictions is heading with respect to the protection of farmland and open spaces.

The ten geographic areas were selected to (a) show the wide range of approaches being used, and (b) identify what some other jurisdictions with important agricultural areas and similar or more intense development pressures to Alberta are doing to respond to concerns about loss and fragmentation.

6.1 U.S. Examples

6.1.1 Colorado

The state of Colorado provides an interesting point of comparison for Alberta since the two jurisdictions have a lot of similarities. Topography, land in agricultural production, amount of irrigation, cattle on feed, rate of urban growth, etc., are all somewhat similar.

1997 Census of Agriculture data showed that Colorado has a land base of 66.6 million acres, of which 36 percent is in federal ownership and 5 percent is in state ownership. Forty nine percent, or 32.6 million acres is land used in farming and ranching. The remaining 10 percent includes all cities and towns, airports, roads, industrial areas and privately owned rural lands not in agricultural use. However, the Census data also showed that between 1987 and 1997, agricultural land in Colorado declined by 1. 4 million acres, or an average of 140,000 acres per year. Since the rate of loss was only 90,000 acres between 1978 to 1992[41], the 1997 data showed a significant increase in the rate at which agricultural land was being lost.

In response, the Governor of Colorado announced plans to regulate growth, in order to "maintain that special Colorado way of life while growing and prospering." The Governor stated that "the economy is booming but with prosperity has come more traffic, a lack of affordable housing and urban sprawl." The state hopes to continue to grow while protecting its natural landscapes, strengthening its neighborhoods, providing a modern transportation system and increasing opportunities for all residents. One of its top priorities is to save open space, including farms and ranches, from over-development. It plans to recognize the diversity of the state and to provide the tools which families and communities will need to chart their course for the future.

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[41] Internet Website: www.nass.usda.gov/co/

Changes include tax breaks, new government agencies and grant assistance. A Governor's Commission on Saving Ranches, Farms and Open Spaces has been established to ensure the state makes the best use of its resources. State funded conservation easements are to be offered to farmers and ranchers. The Governor is also seeking a tax credit to reward landowners who preserve their land for wildlife habitat, as well as sales tax and income tax relief for people who renovate previously developed land.

A program called Colorado Heritage Communities will reward those communities that cooperate with new efforts to stop local governments from going outside their boundaries to annex land. Rewards will be in the form of planning grants for environment, development, transportation and energy use. Plans also include the establishment of an Office of Smart Growth to mediate disputes between neighboring communities.

While reaction to the Governor's plans is generally favorable, there are a number of concerns. They include: where the money will come from, possible backlash from developers, and how much power the Governor will have to successfully regulate growth. Most of these concerns are based on observing the challenges faced by the state of Georgia as it has been implementing similar initiatives. House Democrats see the plan as dodging some of the tough issues, such as enforceable comprehensive plans, allowing local governments to assess impact fees, and urban growth boundaries.

The Governor also established a 17 member Task Force on Agricultural Lands, to consult with stakeholders (including the general public) and to recommend ways for Colorado to maintain agricultural land and productivity. More than 10,000 copies of the Task Force's 12-page report have been distributed. The report describes trends, causes and consequences of farmland loss and contains 22 recommendations for policy changes.

6.1.2 Ohio

Agriculture is Ohio's leading industry. Agriculture and food processing contribute $56.2 billion annually and support one-in-six jobs; yet the state has more urban land area than any other in the nation. There are 16 major metropolitan areas with a population of more than 150,000 each. Nearly all of Ohio's agricultural production occurs in an urban-influenced environment.[42] Between 1974 and 1992, Ohio lost 1.4 million acres of farmland. In the ten years preceding 1992, the U.S. Department of Agriculture's National Resources Inventory shows that 472,000 acres were converted to urban use, and 59% of this land had prime or unique soils. From 1992 through June 1, 1996, the state lost another 100,000 acres and 2000 farms.

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[42] The State of Ohio's Farmland. American Farmland Trust website.

The state established a Farmland Preservation Task Force in 1996. In January 1998, an executive order from the Governor of Ohio directed state agencies to take the protection of productive farmland into consideration when they make policy decisions affecting land acquisition and development. They were also ordered to report on the impact of planned or pending actions which may threaten farmland, and the steps they could take to mitigate or minimize farmland conversion. By 1999, each state agency had submitted a report to be used by the Ohio Department of Agriculture's Office of Farmland Preservation to develop an Ohio Farmland Protection Plan. [43]

The state has also passed enabling legislation for the creation and use of agricultural easements, and created an Agricultural Easement Purchase Fund which provides matching grants to municipalities and non-profit organizations that acquire farmland easements. Local governments have also been authorized to levy or raise sales taxes, increase property taxes, and/or issue bonds to pay for farmland protection. It is interesting to note that these measures were passed by a Senate vote of 32-0 and a House vote of 87-5.

In addition to preferential assessment and right-to-farm laws, Ohio has also established an Office of Farmland Preservation. Matching grants of up to $10,000 each are available to counties for the development of farmland preservation plans.

6.1.3 Wisconsin

Although the authority to make land use decisions lies with the state in Wisconsin, the state has relinquished most of its land use decision-making power to the municipalities, counties and towns. State legislation enables local governments to regulate the zoning and subdivision of land.

Wisconsin's Farmland Preservation Act was signed into law in 1997, to help local governments preserve farmland and to provide tax relief to farmers who participate in local farmland preservation plans. The program is a combination of state income tax credits (to offset local property taxes), county planning and zoning, and local town planning. It is an approach to farmland preservation that retains the tradition of local control over land use and zoning, while providing financial incentives to farmers, and planning assistance to local governments.[44]

Exclusive Agriculture Districts are used by the counties to preserve productive agricultural land for food and fibre production; to prevent land use conflicts between incompatible land uses and control public service costs; to pace and shape urban growth; and to implement provisions of the county agriculture plans. Other districts that are designated by the counties include:

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[43] Ohio Farmland Preservation Task Force – Findings and Recommendations Report to Governor George V. Voinovich, June, 1997. http://www.ohio.gov/agr/FPTPcover.html

[44] Jerry Paulson; Working Paper Series; Center for Agriculture in the Environment

Agricultural Business Districts:
provide for commercial land uses associated with local agricultural production; they require a rural location but not urban services

Transition Districts:
aim to preserve agricultural and open spaces uses, for an unspecified time, and to preserve land that is in close proximity to developed areas where urban expansion is inevitable.

Wisconsin's Farmland Preservation Program has been accused of not doing enough to reduce conversion of farmland to other uses (cropland has declined about 12% in the last 20 years). One problem with the program is that there is often no penalty enforced when farmland is removed. Although the law requires that landowners repay tax credits when the land is removed from the program, there are inadequate staff resources or records to accurately track credits or land use changes.

6.1.4 Oregon

Oregon's farmland preservation program is only one component of the state's efforts to manage its growth. In 1973, the Oregon Legislature adopted Bill 100, requiring all cities and counties to adopt or amend mandatory land use plans and regulations to conform to statewide planning goals. At the same time, Senate Bill 101 established a framework for Exclusive Farm Use (EFU) zoning.

Of Oregon's 19 planning goals, four relate directly to farmland preservation. Goal 3, (Agricultural Lands) requires counties to adopt EFU zoning for all farm and ranch lands. Goal 14 (Urbanization) requires Urban Growth Boundaries (UGBs) for all cities (Oregon has only two categories of local government -cities and counties, so all urban centers are considered to be cities, regardless of size). Goal 11 (Public Facilities and Services) limits urban infrastructure improvements to lands inside UGBs; and Goal 10 (Housing) restricts zoning barriers to higher density housing inside UGBs.

Land that is in an EFU and used primarily to make a profit in farming, automatically qualifies for a special farm use assessment. It loses its special assessment if it is no longer used for farming, if the land is removed from an EFU zone or if a non-farm dwelling or parcel is created.[45] Farmland that is not in an EFU zone, but is being used in the business of farming to make a profit can also qualify for special assessment. In both instances a rollback over the previous five to ten years (depending on the situation) applies where land is taken out of agricultural production.

Within the EFU zones agricultural activities are allowed and a limited number of other uses are permitted but urban uses (e.g. residential subdivisions and shopping malls) are prohibited. The EFU zoning program has focused primarily on regulating new houses and land divisions. The two main reasons for placing limits on new house construction in the EFU zones are:

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[45] Saving Oregon's Farmland. Presentation by Richard P. Benner, Director, Department of Land Conservation and Development to the Oregon Board of Agriculture; February, 1996.

1. they represent the loss of commercial farmland to non-commercial hobby farms that contribute little or nothing to the state's economy; and
2. they often contribute to conflict between farmers and their neighbors.

Under legislation passed in 1993, a new dwelling may be authorized on high value farmland, in support of the farming operation if:

1. the business has produced at least $80,000 in gross annual income in the last two or three of the most recent five year period;
2. it will be occupied by those who produced the commodities that grossed the income; and
3. no dwelling other than that for farm workers is located on the same parcel of land.

Division of Oregon's farmland is also subject to careful regulation. In EFU zones, land divisions are subject to regional minimum parcel sizes - generally 80 acres or more for non-range land and at least 160 acres for range land. While the state's efforts over the last quarter century have resulted in more farmland staying in production than otherwise would have, the system has been far from perfect. The major problems are:

1. fragmentation of the farmland base continues to occur as the result of wealthy citizens being allowed to purchase parcels of farmland and then construct huge homes on the land, simply by following the rules which call for development of a farm plan in order to qualify for farmland purchase and preferential tax assessment on the land; and
2. many urban centers have recently, or will soon run out of land on which to develop (stated within their UGB).

Land prices and house prices within the UGBs have increased dramatically. Between 1990 and 1998, the median house price in Portland increased by 102%, compared to cities such as Phoenix and Denver where median prices rose by 45.1% and 72.6%, respectively. As a result, many people have been forced to look for lower priced land outside the UGB, thereby putting additional pressure on surrounding farmlands.

6.1.5 Washington

Like Oregon, Washington also passed a *Growth Management Act* (GMA) in 1990. Most of its counties have developed inventories of important agricultural land and several have implemented other farmland protection techniques, including zoning, PACE programs and TDRs.

Washington's GMA changed the political and legal climate for land development and conservation and provided new tools for farmland protection. The GMA requires that all counties designate important farmlands (described as lands that are not already characterized by urban growth and that have long-term significance for the commercial production of food and other agricultural products). Counties must adopt regulations that ensure that "the use of land adjacent to agricultural land does not interfere with the continued use, in the accustomed manner and in accordance with the best management practices, of the lands designated for food production." Fast growing counties and their incorporated areas must also prepare detailed, comprehensive plans. They must include a land use element that designates areas and associated population densities for different types of uses. County plans must be consistent with the plans of all internal and adjacent cities and adjacent counties. Urban growth areas must be designated to accommodate projected growth over 20 years. Urban services are not to be provided beyond these designated areas. A county must have a TDR or PACE program in place before an urban growth area can include designated agricultural lands. The GMA guaranteed a public right to participate in preparing comprehensive plans. It also facilitated the establishment of Regional Growth Planning Hearing Boards to address non-compliance issues.

6.2 Canadian Examples

6.2.1 Ontario

More than half of Canada's Class 1 soils are in Ontario, with approximately 90% of this land located in the southwest and south central regions of the province, where urban development pressures are constant and extreme. In response to development pressure, the province uses land use policy and legislation, tax incentives, right-to-farm laws and land tenure programs to mitigate urban development and farmland conversion. The Niagara region has received special attention through a number of programs.

Land use regulatory mechanisms have been indirectly aimed at preserving farmland. Land use planning is governed by the Planning Act of 1983 which allows the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) to review land use policies affecting agriculture. Once a municipality has adopted an Official Plan, it is reviewed by OMAFRA to ensure that it reflects the province's policies for agricultural land use.

Since Ontario's Planning Act was amended in 1995, policies on agricultural land development are contained within the Provincial Policy Statements[46] (similar to Alberta's Provincial Land Use Policies document). The Policy Statements prohibit non-farm forms of development in a number of areas, including specialty croplands (e.g. the Niagara fruit belt) and prohibit future expansion of urban boundaries on these lands. Policies to protect specialty croplands have priority over local official plans. New policies also prohibit a wide range of severance in agricultural areas, reduce the land uses permitted in prime agricultural areas and prohibit many uses that were formerly allowed.

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[46] Website of the Ontario Ministry of Agriculture, Food and Rural Affairs: http://www.gov.on.ca/0.../english/landuse/Facts/provpoli.html

Under previous legislation, Ontario's farmland protection received considerable criticism. Municipalities could influence the integrity of the agricultural area through zoning by-laws and severance controls, because Ontario's Food Land Guidelines were not law. The fate of these areas depended on the nature of the controls and the ease with which plans could be amended. While it is premature to judge the success of farmland protection under Ontario's revised Planning Act, there is skepticism as to whether anything will change unless the new policies are made enforceable.

6.2.2 New Brunswick

About two-thirds of New Brunswick's total cultivated land is in the St. John River Valley, home to 52% of the province's residents – two percent of whom live on farms.

Traditionally, the approach to rural planning was to encourage development anywhere unless health or environmental problems are likely to result. This approach leads to rural-urban conflict. In response, the provincial government enacted the Agricultural Operations Practices Act in 1986, as a means of protecting farmers from nuisance suits. It also implemented trespass laws and the Farm Land Identification Program (FLIP) for tax deferrals. The goal of FLIP is to encourage landowners to maintain their agricultural land for future agricultural production. Under FLIP, property owners can enter into agreements with the province to keep their lands in production in return for a payment deferral on the Provincial Real Property Tax. If land under the program is no longer available for agricultural production, the province can recapture up to ten years of deferred taxes, along with monetary penalties.

New Brunswick recently introduced its Agricultural Land Use Policy. The goal of the policy is to provide an environment in which farmers and agricultural industries can competitively produce as much of the province's food requirements as possible, with additional production for export where opportunities exist. As one strategy in implementing the policy, the province requires that all land use plans and controls are consistent with the Agricultural Land Use Policy.

6.2.3 Nova Scotia

Although the Planning Act (1989) allows for the development of a provincial land use policy, there is no consistent provincial policy framework to protect the province's resource base. Right-to-farm legislation, land banking and tax incentives are the only tools used to protect farmland, although at least one municipality (King's County) has adopted a local agricultural zoning program. The county also established growth centers in areas already urbanized. The county provides an equal level of services within the growth centers to encourage settlement.

Based on assessments to date, the agricultural zoning program in King's County has been successful in deterring non-farm development. The zoning bylaw has also redirected new housing into serviced growth centers, with 43% of the county's population living in the growth centers in 1991, compared to 33% in 1976. On the negative side, however, the program has increased the market value and demand for existing vacant parcels in the agricultural district and some farmers have succeeded in subdividing their land.

6.2.4 British Columbia

As noted by Beazly and Beesley in their 1995 report on *Agricultural Land Preservation Strategies in Canada*, the Okanagan Valley and the lower mainland of B.C. have been the site of most non-agricultural development in the past thirty years. At the same time, these areas have generated about 77% of all gross farm receipts in the province.

British Columbia enacted the *Provincial Land Commission Act* in 1973. The Act's objectives were to preserve agricultural land for farm use, maintain the family farm and encourage young people to farm. Under the Act a Provincial Land Commission was created to establish Agricultural Land Reserves (ALR), a form of province-wide mandatory, exclusive, agricultural zoning. It allows land to be excluded from, or land uses to be changed within, an ALR. The Commission overrides local planning powers.

British Columbia also provides two forms of tax breaks for farmers, as well as a right-to-farm law. Preferential farm property assessment has been in place since 1930. The 1974 Assessment Act makes farmers eligible for sales and fuel tax reductions, as well as partial exemptions from school taxes.

Based on statistics of provincial farmland losses before and after 1973, the province's efforts have reduced the rate of loss to between a quarter and a fifth of the pre-Commission rate. The program has helped control haphazard subdivision development and directed development onto lower quality lands.

According to Mooney, in his 1990 study of farmland in the Richmond area, the ALR program is not protecting farmland within the urban fringe. It has also denied many farmers the right to develop their property, without compensation.

Greenwood and Whybrow (1991) noted the Commission has allowed subdivisions in the ALR and created new residential opportunities. In doing so, it has threatened the viability of agriculture within the ALR as a result of having increased parcelling, non-farm populations and reduced farm sizes. In the mid-1990s, it also granted permission for golf course developments within the ALR.

In 1999, British Columbia became the first Canadian province to join the Smart Growth Network in the U.S.. Smart Growth B.C.[47] was established by the University of Victoria and the West Coast Environmental Law Association. Its mission is "to promote compact urban development and to maintain viable agricultural and other resource lands outside cities." The goal is to encourage land-use decisions that reflect smart growth principles: more efficient use of land, sustainable transportation, affordable housing and environmental protection.

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[47] Smart Growth B.C.. Alternatives Journal 26.3. Summer 2000

Smart Growth B.C. was partially triggered by the province's 1997 Growth Strategies Act which required municipalities to develop regional plans that would allow them to manage growth more effectively. The organization is supported by local governments, Chambers of Commerce, ratepayers associations, developers, development consultants and some environmental groups.

6.2.5 Quebec

As in BC, and in most jurisdictions across North America, the majority of Quebec's most productive soils are near that province's largest urban centers. Between 1966 and 1986, Quebec lost 51,000 hectares of arable land; 50% was prime agricultural land (Canada Land Inventory Class 1-3). The province influences agricultural land use through its planning legislation, right-to-farm laws, tax incentives, and land tenure programs. Like British Columbia, Quebec also has province-wide exclusive agricultural zoning. Its *Act to Preserve Agricultural Land* has two main goals: 1) to prevent non-agricultural uses in protected agricultural areas, and 2) to prevent subdivision in protected areas. The Act requires the identification of an exclusive sector of Agricultural Land Classes 1, 2 or 3, and organic soils, and forbids the subdivision of any lot that is part of the exclusive sector.

Within its agricultural zones, no person shall incur liability for nuisances such as dust, odor or noise resulting from farming activities as long as they are in accordance with the law, and in compliance with the regulations and orders of the *Environment Quality Act*.

Along with the *Act to Preserve Agricultural Land*, the Quebec government also instituted province-wide planning through the *Land Use Planning and Development Act*. This comprehensive planning legislation created a system of Regional County Municipalities that are responsible for developing and implementing land use plans for their respective jurisdictions. They may negotiate for inclusion or exclusion of lands within a Designated Agricultural Region (DAR).

Although the Quebec approach has been criticized as "draconian"[48] it has proven to be effective in slowing the rate of farmland conversion, directing development to land contiguous with existing urban zones and reverting some vacant land back into agriculture.[49] The main drawback to the program is the impermanence of agricultural zoning as a result of Cabinet having the power to rezone portions of the DAR. The growing number of non-conforming uses within the DAR is seen as a threat to the viability of agricultural operations. Vaillancourt and Monty[50] (1985) found that land values in the exclusive agricultural zones were between 14 and 30% lower than that of unrestricted land.

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[48] John T. Pierce and Jacinthe Seguin. Exclusive Agricultural Zoning in British Columbia and Quebec: Problems and Prospects

[49] Bryant and Johnston, 1992

[50] Agricultural Land Protection in Quebec: A Victim of its Own Success. Lorne Giroux. Resources No. 38. Spring 1992

7.0 Private Sector Initiatives

Across North American, landowners, conservation groups and others in the private sector have been taking an active role in protecting farmland and open spaces. Although land trusts and conservation easements have been the major "tools" used by these groups and individuals, other actions have also been taken.

7.1 Land Trusts

Land Trusts are private, nonprofit organizations established to protect natural areas and open spaces. While most seek to protect land with natural, scenic or recreational values, some focus on protecting farm and forest lands.

The first land trust was established in Massachusetts in 1891. Today there are more than 1100 land trusts in 48 states. Collectively they have almost a million members and nearly seven million acres under easement or some other form of protective agreement. Although land trusts have been in use in Canada for some time, the objective of most has been to protect habitat and the environment, rather than farm or ranch land. As Tom Daniels, Director of the Agricultural Preserve Board in Lancaster County, Pennsylvania noted in his 1997 report, *Holding Our Ground*,[51] "many people feel that public land-use planning efforts have not adequately protected valuable farmland and natural areas." He also stated, "many rural landowners simply distrust government, hold dear their private property rights and bristle at the possibility of tighter land -use regulation." It is for these reasons that land trusts have become popular with landowners who want to protect their land base for the benefit of future generations, but who also want to do so in a voluntary fashion.

Although most land trusts focus on the local community, a few have a statewide presence. The American Farmland Trust, in Washington, D.C. is the only national land trust in North America devoted to farmland protection.

In 1992, a group of ranchers in the Steamboat Springs area of Colorado met to discuss concerns about the impacts recreational developments were having in their area and how valuable ranchland was being lost. They began to work with the American Farmland Trust and other area residents to develop an Open Lands Plan for the area. Although there were over 30 land trusts in the state, the ranchers were concerned that putting their land into one of these trusts would guarantee the preservation of open space only. They wanted to protect their land for cattle grazing. By 1995, they had established the Colorado Cattlemen's Agricultural Land Trust - an incentive-based approach to protecting remaining ranch land through the use of conservation easements, cluster development and other tools. Today, the Trust has 26 easements covering 26,000 acres.

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[51] Daniels Book

In a similar move, a group of ranchers in the foothills of southwestern Alberta established the Southern Alberta Land Trust Society (SALTS), in early 1998, in response to increasing concern about fragmentation along the Eastern Slopes of the Rockies and the impacts on rural communities and wildlife habitat. Ranches in the area have been under increasing threat from recreational land uses, which have driven up land prices. SALTS' objective is "to preserve cattle ranching as an important facet of the provincial economy and as a way of life, by providing an innovative way for these landowners to protect the unbroken landscapes that are vital to both ranching and wildlife."

7.2 Other Private Sector Strategies

In California's Central Valley, an alliance of farmers, land preservationists and developers have been lobbying government officials to approve developments with higher densities of housing. The Growth Alternatives Alliance is urging smaller lots, narrower streets, in-filling and other means to slow the pace of farmland consumption. Getting approval for higher density development requires seeking variances from zoning regulations. It is a challenge since officials are reluctant to advocate higher density for fear the marketplace will reject the initiative. Most developers and urban planners say that high-density housing runs counter to the California homebuyer's preference for big suburban-style lots. The downside is that, with current densities and a forecast population growth of more than 1.5 million by the year 2040, an estimated million acres of farmland will be lost to development. By doubling the density, the amount of valley farmland consumed could be cut to a half million acres. Fresno County, which would bear the brunt of the development, is the top agricultural county in the U.S., with a $3.4 billion-a-year farm economy.

8.0 Conclusions

Alberta's farm and ranchlands and the producers who work the land are under pressure from other segments of Alberta society and will continue to face pressure as the province grows and diversifies. Based on the data gathered, results of the opinion survey, and the tools review a number of observations can be made:

1. As urban expansion continues, farmland and open spaces are vulnerable to conversion. Fragmentation of the land base, as a result of urban sprawl and country residential development appears to be having a greater impact on the agricultural industry than ever before.
2. All municipalities across the province are not experiencing the same development pressures on agricultural lands. Development pressures are greatest along the Edmonton-Calgary and Calgary-Canmore corridors.
3. Most Municipal Development Plans and Land Use Bylaws include the protection of agriculture and agricultural land as a fundamental goal. Whether the objectives of the municipal plans are being met depends on how policies are interpreted and put into practice through the actions of the planning and approving authorities, municipal councils and appeal boards.
4. Municipal planning officials and elected representatives feel more tools/options are required to protect productive farmlands. Some of the approaches used in the United States may have application in Alberta.
5. Several municipalities do not appear to be conforming to the 1996 Provincial Land Use Policies. It also appears that some municipalities do not consider the provisions in the Agricultural Operation Practices Act when they prepare their municipal plans and land use bylaws and issue subdivision and development approvals.
6. Municipalities facing the greatest development pressures generally have greater population densities and smaller farm units. In these municipalities there is increasing pressure to further reduce the size of the farm units and to restrict the types of agricultural activities that can be conducted.
7. During the study period over 90% of the development permits for Intensive Livestock Operations were approved by the municipal development authorities. Farm and non-farm families were equally likely to appeal these permits.

In addition to these observations one of the most important findings was that most participants felt there was a need for the province to improve the planning process to protect agricultural lands and to provide certainty to developers and other industries. The participants recognized that municipal councils face difficult choices when it comes to making land use decisions. Councils are under pressure to diversify local industry, to provide employment and alternate housing and to lower taxes. The participants also recognized that while we have time to take the steps to give the municipalities the required policies, legislation and tools to preserve our farm and ranchlands there is an urgency to get started. Otherwise we will loose some of the prime land around our urban centers and recreation areas that provide the many benefits that can only be derived from open spaces.

Fragmentation appears to be the biggest issue facing producers. Fragmentation and right to farm usually coincide, but if fragmentation of agricultural land is occurring in a community with a low-density population, it is unlikely that land use conflicts will arise. However, in more densely populated areas, a similar degree of fragmentation often results in a greater number of land use conflicts.

Key factors that influence loss and fragmentation of the farmland base include (1) the health of the farm economy, (2) shifting demographics, (3) population growth, (4) lack of understanding of normal farm operations, (5) increasing land values, and (6) municipal policies and decision making. The health of the farm economy is a major contributor to farmland conversion. When commodity prices are low, it often makes better economic sense for farmers to sell their land to a developer than to leave it in agricultural production. The average age of farmers today (48.3 years) means that many are retiring, or close to retirement, and see the land as part of their retirement plan. If there are no family members who want to take over the farm, it is more likely to be sold to a developer, especially if it is in an area that is experiencing development pressure.

Appendix A – Data Entry Forms

Table 1. Subdivision Applications. Municipality:____ Year:________

File No.	Quarter Section – Legal	Approved (yes/no)	Land Use District or Zone	CLI or FAR[a] (indicate which)	Existing Land Use[b]	Stated Reason for Subdividing	Proposed Land Use	Parcel size (ha)	1st, 2nd, or 3rd parcels out[c]	Appealed (yes/no)	Reason for Appeal	Upheld or Over-turned[d]	Approval Date

a – CLI – Land Capability Rating; FAR – Farm Assessment Rating

b - Land Use codes will vary amongst municipalities. If you use abbreviations, please explain them. Suggested codes can be Extensive Agriculture – EA; Intensive Agriculture – IA; Country Residential – CR; Small holding (some Ag production) – SH; Urban Residential (in hamlets under county jurisdiction) – UR; Recreation – Rec; Highway Commercial – HC; Watershed Protection (bush cover) – WP;

c - if don't know whether 1st, 2nd, 3rd – please put "unsure"

d – Overturned – O; Upheld – U – Decision of Appeal Board

Table 2. Development Permits. Municipality:______________________________ Year __________

File No.	Quarter Section	Approved (yes/no)	Reasons for applying	Appealed (yes/no)	Appellants'/Complainants' Land Use[a]	Upheld / Denied[b]	Reasons	Date of Approval?

a - Land Use codes will vary amongst municipalities. If you use abbreviations, please explain them. Suggested codes can be Extensive Agriculture – EA; Intensive Agriculture – IA; Country Residential – CR; Small holding (some Ag production) – SH; Urban Residential (in hamlets under county jurisdiction) – UR; Recreation – Rec; Highway Commercial – HC; Watershed Protection (bush cover) – WP;

b – Decision upheld or denied as a result of the notification of neighbours (complainant) or appeal of initial decision (appellant)

Appendix B – Agricultural Profiles for Municipalities in the Province of Alberta

Table 1. Agriculture Profiles of the 28 Municipalities (1996 Statistics Canada Census of Agriculture), ranked by increasing rural population

County/MD	Number of Farms	Mean Farm Size	Rural Population	% Land in Crops	% Land in SF	% Land in Pasture	Total Ag Land in Production (acres)	Top 5 Farm Types					
								Cattle	Wheat	Grains/ Oil-seeds	Field Crops	Misc	Dairy
Pincher Creek	610	1,272	3,172	26.3	1.4	52.1	619,686	70.5		5.2	5.4	10.0	3.4
Forty Mile	771	934	3,230	36.7	16.8	46.6	1,745,664	20.5	52.2	16.5	3.7	1.5	
Warner	617	1,583	3,561	53.8	13.2	30.2	949,103	42.2	30.4	14.5	2.9	3.2	
Vulcan	801	1,597	3,829	50.8	22.1	24.9	1,251,208	36.7	31.4	22.1	1.8	2.7	
Cardston	796	1,370	4,565	45.7	2.5	49.8	1,067,772	59.4	6.5	12.3		12.0	3.7
Willow Creek	939	1,188	5,113	42.9	4.0	50.8	1,089,365	53.7	11.5	14.1		7.6	3.9
Cypress	1,046	2,233	5,262	16.7	6.8	73.5	2,265,545	48.5	24.8	5.8	5.2	10.3	
Ranchland	66	4,695	5,347	2.3		52.5	309,840	49.2			8.2	27.9	4.9
Taber	960	1,037	5,644	48.5	12.3	37.2	975,845	44.2	18.7	9.9	12.5	4.9	
Newell	997	1,389	[illegible]	22.3	4.1	71.5	1,364,764	[illegible]	[illegible]	10.7	7.4	5.5	
Wheatland	974	1,174	6,714	61.3	14.3	21.1	1,104,244	46.3	21.4	14.6	4.1	5.9	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Calgary	126	364	0	55.6	2.9	37.5	44,015	33.7	6.7	8.7	8.7	31.7	
Acadia	118	2,236	533	36.6	28.6	32.1	256,639	7.0	87.0	3.5			0.9
Bighorn	89	1,322	1,269	3.3		94.9	117,665	54.8			4.1	32.9	2.7
Special Area #3	482	3,021	1,584	25.6	17.0	54.9	1,418,530	33.4	48.8	8.5		3.0	
Special Area #4	370	2,474	1,641	28.1	8.2	59.9	977,929	58.8	16.9	16.0		1.9	
Paintearth	545	1,409	2,316	46.5	7.3	40.8	726,423	50.6	9.2	26.7	2.8	3.6	

County/MD	Number of Farms	Mean Farm Size	Rural Population	% Land in Crops	% Land in SF	% Land in Pasture	Total Ag Land in Production (acres)	Top 5 Farm Types					
								Cattle	Wheat	Grains/ Oil-seeds	Field Crops	Misc	Dairy
Special Area #2	602	3,709	2,531	16.3	6.9	75.4	2,201,127	60.2	14.9	11.6	4.3	3.2	
Starland	439	1,380	3,321	53.0	19.0	24.4	584,160	38.5	24.2	22.6	3.5	3.0	
Vulcan	801	646	3,829	51.9	22.6	25.5	506,364	36.7	31.4	22.1	1.8	2.7	
Kneehill	951	931	4,887	68.1	8.2	20.7	859,855	36.7	22.8	19.6		4.7	
Stettler	922	1,053	5,278	45.8	5.2	43.0	911,990	54.7	7.4	17.9	5.3	5.7	
Ponoka	1,449	459	8,313	45.5	1.3	44.1	603,911	64.1		6.8	6.0	9.2	7.7
Lacombe	1,481	459	10,081	59.7	1.7	32.0	635,191	50.7		14.4	6.2	9.9	6.2
Clearwater	1,377	526	10,915	27.7	0.9	62.8	662,014	70.8			8.9	9.3	3.5
Mountain View	1,952	481	11,277	52.7	2.9	39.1	889,136	60.3		11.7	6.9	10.4	3.7
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Edmonton	233	311	0	61.3	5.3	27.3	68,022	19.6	9.5	22.1	7.0	25.1	
Provost	564	1,623	2,705	40.3	9.9	43.1	854,239	48.8	16.3	23.0	3.3	4.2	
Two Hills	761	760	2,707	58.8	6.1	26.0	525,695	38.0	12.5	33.8	4.7		
Lsr. Slave Lake	205	616	2,716	29.8	3.6	49.3	104,391	55.1		10.8	14.2	9.7	4.5
Thorhild	658	582	2,901	54.9	3.9	31.0	344,166	43.6	4.5	28.4	8.9	5.5	
Opportunity	11	705	3,060	32.8		60.0	7,224	40.0	10.0	20.0	10.0	20.0	
Minburn	836	845	3,405	63.1	6.3	23.6	656,798	35.7	12.3	39.9		3.7	
Woodlands	360	622	3,669	27.6	4.7	52.2	189,353	60.1		3.1	13.1	15.8	2.7
Flagstaff	992	1,049	4,015	67.0	6.0	19.6	963,360	28.4	21.4	38.3		2.6	
Wainwright	641	1,395	4,044	50.2	6.2	38.9	852,405	39.4	16.8	28.6		4.1	
Wetaskiwin	1,416	485	4,044	46.3	1.8	43.3	627,304	52.7		[illegible]	7.6	14.7	5.3

Table 1. Agriculture Profiles of the 28 Municipalities (1996 Statistics Canada Census of Agriculture), ranked by increasing rural population

County/MD	Number of Farms	Mean Farm Size	Rural Population	% Land in Crops	% Land in SF	% Land in Pasture	Total Ag Land in Production (acres)	Top 5 Farm Types					
								Cattle	Wheat	Grains/ Oil-seeds	Field Crops	Misc	Dairy
Pincher Creek	610	1,272	3,172	26.3	1.4	52.1	619,686	70.5		5.2	5.4	10.0	3.4
Forty Mile	771	934	3,230	36.7	16.8	46.6	1,745,664	20.5	52.2	16.5	3.7	1.5	
Warner	617	1,583	3,561	53.8	13.2	30.2	949,103	42.2	30.4	14.5	2.9	3.2	
Vulcan	**801**	**1,597**	**3,829**	**50.8**	**22.1**	**24.9**	**1,251,208**	**36.7**	**31.4**	**22.1**	**1.8**	**2.7**	
Cardston	**796**	**1,370**	**4,565**	**45.7**	**2.5**	**49.8**	**1,067,772**	**59.4**	**6.5**	**12.3**		**12.0**	**3.7**
Willow Creek	939	1,188	5,113	42.9	4.0	50.8	1,089,365	53.7	11.5	14.1		7.6	3.9
Cypress	**1,046**	**2,233**	**5,262**	**16.7**	**6.8**	**73.5**	**2,265,545**	**48.5**	**24.8**	**5.8**	**5.2**	**10.3**	
Ranchland	66	4,695	5,347	2.3		52.5	309,840	49.2			8.2	27.9	4.9
Taber	**960**	**1,037**	**5,644**	**48.5**	**12.3**	**37.2**	**975,845**	**44.2**	**18.7**	**9.9**	**12.5**	**4.9**	
Newell	**997**	**1,389**	**6,421**	**22.3**	**4.1**	**71.5**	**1,354,764**	**61.0**	**6.4**	**10.7**	**7.4**	**5.5**	
Wheatland	**974**	**1,174**	**6,714**	**61.3**	**14.3**	**21.1**	**1,104,244**	**46.3**	**21.4**	**14.6**	**4.1**	**5.9**	
Lethbridge	**1,221**	**651**	**9,290**	**70.2**	**11.0**	**16.3**	**772,184**	[illegible]	**15.6**	**12.5**	**10.1**	**6.2**	
Foothills	**1,418**	**641**	**13,703**	**45.0**	**6.1**	**45.1**	**873,673**	[illegible]	[illegible]	**11.0**	**5.6**	**23.1**	
Calgary	126	364	0	55.6	2.9	37.5	44,015	33.7	6.7	8.7	8.7	31.7	
Acadia	118	2,236	533	36.6	28.6	32.1	256,639	7.0	87.0	3.5			0.9
Bighorn	**89**	**1,322**	**1,269**	**3.3**		**94.9**	**117,665**	**54.8**			**4.1**	**32.9**	**2.7**
Special Area #3	482	3,021	1,584	25.6	17.0	54.9	1,418,530	33.4	48.8	8.5		3.0	
Special Area #4	370	2,474	1,641	28.1	8.2	59.9	977,929	58.8	16.9	16.0		1.9	
Paintearth	545	1,409	2,316	46.5	7.3	40.8	726,423	50.6	9.2	26.7	2.8	3.6	

County/MD	Number of Farms	Mean Farm Size	Rural Population	% Land in Crops	% Land in SF	% Land in Pasture	Total Ag Land in Production (acres)	Top 5 Farm Types					
								Cattle	Wheat	Grains/ Oil-seeds	Field Crops	Misc	Dairy
Special Area #2	602	3,709	2,531	16.3	6.9	75.4	2,201,127	60.2	14.9	11.6	4.3	3.2	
Starland	439	1,380	3,321	53.0	19.0	24.4	584,160	38.5	24.2	22.6	3.5	3.0	
Vulcan	801	646	3,829	51.9	22.6	25.5	506,364	36.7	31.4	22.1	1.8	2.7	
Kneehill	951	931	4,887	68.1	8.2	20.7	859,855	36.7	22.8	19.6		4.7	
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Ponoka	1,449	459	8,313	45.5	1.3	44.1	603,911	64.1		6.8	6.0	9.2	7.7
Lacombe	**1,481**	**459**	**10,081**	**59.7**	**1.7**	**32.0**	**635,191**	**50.7**		**14.4**	**6.2**	**9.9**	**6.2**
Clearwater	1,377	526	10,915	27.7	0.9	62.8	662,014	70.8			8.9	9.3	3.5
Mountain View	**1,952**	**481**	**11,277**	**52.7**	**2.9**	**39.1**	**889,136**	**60.3**		**11.7**	**6.9**	**10.4**	**3.7**
Red Deer	**2,030**	**487**	**17,126**	**60.0**	[illegible]	**32.4**	**980,279**	**52.3**	[illegible]	[illegible]	**6.6**	**11.8**	[illegible]
Rockyview	**1,630**	**668**	**23,326**	**51.2**	[illegible]	**45.0**	**1,038,907**	**48.7**	**5.5**	[illegible]	**4.7**	**19.3**	[illegible]
Edmonton	233	311	0	61.3	5.3	27.3	68,022	19.6	9.5	22.1	7.0	25.1	
Provost	**564**	**1,623**	**2,705**	**40.3**	**9.9**	**43.1**	**854,239**	**48.8**	**16.3**	**23.0**	3.3	4.2	
Two Hills	761	760	2,707	58.8	6.1	26.0	525,695	38.0	12.5	33.8	4.7		
Lsr. Slave Lake	205	616	2,716	29.8	3.6	49.3	104,391	55.1		10.8	14.2	9.7	4.5
Thorhild	658	582	2,901	54.9	3.9	31.0	344,166	43.6	4.5	28.4	8.9	5.5	
Opportunity	11	705	3,060	32.8		60.0	7,224	40.0	10.0	20.0	10.0	20.0	
Minburn	**836**	**845**	**3,405**	**63.1**	**6.3**	**23.6**	**656,798**	**35.7**	**12.3**	**39.9**		3.7	
Woodlands	360	622	3,669	27.6	4.7	52.2	189,353	60.1		3.1	13.1	15.8	2.7
Flagstaff	992	1,049	4,015	67.0	6.0	19.6	963,360	28.4	21.4	38.3		2.6	
Wainwright	641	1,395	4,044	50.2	6.2	38.9	852,405	39.4	16.8	28.6		4.1	
Wetaskiwin	**1,416**	**485**	**4,044**	**46.3**	**1.8**	**43.3**	**627,304**	**52.7**		**10.9**	**7.6**	**14.7**	**5.3**

County/MD	Number of Farms	Mean Farm Size	Rural Population	% Land in Crops	% Land in SF	% Land in Pasture	Total Ag Land in Production (acres)	Top 5 Farm Types					
								Cattle	Wheat	Grains/ Oil-seeds	Field Crops	Misc	Dairy
Lamont	1,105	507	4,212	67.5	4.7	20.5	510,765	32.3	15.4	31.5	4.5	4.5	
Smoky Lake	629	791	4,302	42.2	3.8	45.4	455,091	47.0		21.7	9.7	6.7	
Beaver	1,026	740	5,659	38.2	6.1	26.9	692,748	41.3	11.6	26.9		4.8	
Barrhead	1,023	502	5,870	51.2	1.8	35.4	700,724	20.5	52.2	16.5	3.7		
St. Paul	961	803	6,335	39.7	3.2	48.9	708,221	52.2		15.2	10.7	7.0	
Brazeau	701	419	6,589	33.1	2.2	51.7	255,780	61.2		3.3	13.3	15.1	2.1
Westlock	1,115	605	6,958	61.3	3.2	27.0	617,216	48.0		22.0	8.2	4.5	3.5
Athabasca	1,055	664	7,415	44.6	5.4	33.8	586,776	50.1		17.1	14.8	7.7	
Vermilion River	1,405	1,000	7,553	52.7	6.4	34.7	1,320,255	42.2	12.5	28.6		4.6	
Camrose	1,432	584	7,613	69.1	3.7	20.7	782,693	37.2	8.0	30.9		5.0	4.0
Lac Ste Anne	1,255	493	8,737	41.9	1.8	45.9	554,875	64.4		3.9	10.6	12.1	2.5
Yellowhead	927	553	9,352	30.4	2.2	51.7	432,250	61.6		3.6	11.9	15.1	2.4
Leduc	1,703	348	12,361	68.5	2.5	29.1	546,094	42.1		12.9	9.0	11.9	10.5
Sturgeon	1,172	429	14,983	71.4	3.2	17.4	463,479	28.8	5.8	27.2	8.6	13.5	
Bonnyville	1,349	835	16,044	33.2	2.6	50.8	975,075	55.6		9.6	11.0	10.9	
Parkland	1,196	404	23,492	45.4	1.7	41.2	426,396	48.2		10.2	8.1	20.0	9.4
Strathcona	938	[illegible]	24,726	58.6	4.2	28.9	[illegible]	38.6	[illegible]	[illegible]	6.7	[illegible]	23.7
Spirit River	185	965	809	73.1	7.1	11.7	164,050	13.3	35.9	35.9	7.7	3.3	
Birch Hills	362	1,319	1,356	60.5	6.5	24.1	435,031	17.1	16.2	46.7	8.3	3.1	
Peace	251	921	1,562	57.5	4.7	27.1	206,537	21.9	9.7	46.4	6.8	7.6	
Fairview	344	914	1,829	66.5	3.6	21.3	287,672	15.2	10.9	49.1	4.3	5.0	
East Peace	280	1,185	2,264	55.7	4.2	19.9	264,675	15.3	20.4	34.5	17.3	5.9	
Smoky River	527	1,070	2,491	77.5	4.4	9.8	516,680	8.0	21.1	51.3	12.9	4.1	
Saddle Hills	660	968	2,724	51.9	8.1	26.1	549,922	28.6	20.7	29.1	8.2	6.9	

County/MD	Number of Farms	Mean Farm Size	Rural Population	% Land in Crops	% Land in SF	% Land in Pasture	Total Ag Land in Production (acres)	Top 5 Farm Types					
								Cattle	Wheat	Grains/ Oil- seeds	Field Crops	Misc	Dairy
Clear Hills	591	1,047	2,886	48.6	4.8	32.6	532,193	26.8		46.4	9.5	5.1	
Northern Lights	735	924	4,462	53.5	8.7	18.0	544,815	17.0	9.1	46.7	13.2	6.0	
Greenview	798	868	5,433	38.4	3.8	41.5	579,942	43.1	6.6	14.8	15.0	12.6	
Big Lake	532	819	5,830	36.8	5.5	36.6	343,600	50.7	5.8	17.1	11.5	6.4	
MacKenzie	669	771	7,980	55.4	8.1	15.8	427,594	10.9	7.2	60.6	8.6		
Grande Prairie	1,560	761	13,750	52.6	5.9	30.6	1,058,349	[illegible]	[illegible]	30.7	10.8	11.1	

Shading based on LFI (Table 3) MEDIUM (4 – 6) LOW (7 – 10)

a- based on summing the acreage in crops, summer fallow and total pasture; b- determined by commodity or commodity group accounting for greater than 51% of gross farm income; Table derived from "*1996 Alberta Municipality Agriculture Profiles*," Production and Economics and Statistics Branch, AAFRD

County/MD	Number of Farms	Mean Farm Size	Rural Population	% Land in Crops	% Land in SF	% Land in Pasture	Total Ag Land in Production (acres)	Top 5 Farm Types					
								Cattle	Wheat	Grains/ Oil-seeds	Field Crops	Misc	Dairy
Lamont	1,105	507	4,212	67.5	4.7	20.5	510,765	32.3	15.4	31.5	4.5	4.5	
Smoky Lake	629	791	4,302	42.2	3.8	45.4	455,091	47.0		21.7	9.7	6.7	
Beaver	1,026	740	5,659	38.2	6.1	26.9	692,748	41.3	11.6	26.9		4.8	
Barrhead	1,023	502	5,870	51.2	1.8	35.4	700,724	20.5	52.2	16.5	3.7		
St. Paul	961	803	6,335	39.7	3.2	48.9	708,221	52.2		15.2	10.7	7.0	
Brazeau	701	419	6,589	33.1	2.2	51.7	255,780	61.2		3.3	13.3	15.1	2.1
Westlock	1,115	605	6,958	61.3	3.2	27.0	617,216	48.0		22.0	8.2	4.5	3.5
Athabasca	1,055	664	7,415	44.6	5.4	33.8	586,776	50.1		17.1	14.8	7.7	
Vermilion River	1,405	1,000	7,553	52.7	6.4	34.7	1,320,255	42.2	12.5	28.6		4.6	
Camrose	1,432	584	7,613	69.1	3.7	20.7	782,693	37.2	8.0	30.9		5.0	4.0
Lac Ste Anne	1,255	493	8,737	41.9	1.8	45.9	554,875	64.4		3.9	10.6	12.1	2.5
Yellowhead	927	553	9,352	30.4	2.2	51.7	432,250	61.6		3.6	11.9	15.1	2.4
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	9.0	[illegible]	10.5
Sturgeon	[illegible]	429	14,983	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8.6	13.5	[illegible]
Bonnyville	1,349	835	16,044	33.2	2.6	50.8	975,075	55.6		9.6	11.0	10.9	
Parkland	1,196	404	23,492	45.4	1.7	41.2	426,396	48.2		10.2	8.1	20.0	9.4
Spirit River	185	965	809	73.1	7.1	11.7	164,050	13.3	35.9	35.9	7.7	3.3	
Birch Hills	362	1,319	1,356	60.5	6.5	24.1	435,031	17.1	16.2	46.7	8.3	3.1	
Peace	251	921	1,562	57.5	4.7	27.1	206,537	21.9	9.7	46.4	6.8	7.6	
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Big Lake	532	819	5,830	36.8	5.5	36.6	343,600	50.7	5.8	17.1	11.5	6.4	
MacKenzie	669	771	7,980	55.4	8.1	15.8	427,594	10.9	7.2	60.6	8.6		

Shading based on LFI (Table 3)		MEDIUM (4 – 6)	LOW (7 – 10)

a- based on summing the acreage in crops, summer fallow and total pasture; b- determined by commodity or commodity group accounting for greater than 51% of gross farm income; Table derived from "*1996 Alberta Municipality Agriculture Profiles*," Production and Economics and Statistics Branch, AAFRD

Appendix C – Municipal Development Plans and Land Use Bylaws: Policy Scan

Appendix C1 Summary of Policy Components Defining Agricultural Land

County/ MD	Definitions			CLI		FAR		Ex-clusions
	None	General	Class	Good	Poor	Good	Poor	
Barrhead		√ (c)	√	1 to 3 (b)	4 and up	41% and up	Under 41%	
Beaver No. 9	√							
Bighorn		√ (a)						
Bonnyville	√							
Camrose		√ (c)	√			40% and up	Under 40%	
Clearwater	√							
Cypress			√	1 to 3	4 to 6			
Foothills		√ (a)	√	1 to 3	4 and up			
Forty Mile			√	1 to 3	4 and 6			
Grande Prairie (1/97-3/98)			√	1 to 3		35% and up	Under 35%	(e)
Grande Prairie (7/98-12/98)			√			35% and up	Under 35%	(e)
Lac Ste. Anne			√	1 to 3	4 and up	41% and up	Under 41%	(c), (d)
Leduc			√	1 to 3	4 and up	41% and up	Under 41%	(e), (d)
Lethbridge			√	1to4, (c) (d)	5 and up			(a), (d) and (b)
Minburn			√	1 to 3	4 to 7			
Mountainview			√	1 to 4	5 and up	28% and up	Under 28%	
Newell			√	1 to 3	4 and up			
Peace			√	1 to ¾	4 and up	35% and up	Under 35%	
Pincher Creek	√							
Ponoka			√	1 to 4	5 and up	40% and up	Under 40%	
Provost		√ (a), (c)	√	1 to 4	5 and up	40% and up	Under 40%	
Red Deer			√	1 to 4	5 and up	28% and up	Under 28%	
Rockyview	√							
St. Paul	√							
Starland			√	1 to 4	5 and up			
Stettler			√	1 to 4	5 and up	28% and up	Under 28%	(c), (d)

County/ MD	Definitions			CLI		FAR		Exclusions
	None	General	Class	Good	Poor	Good	Poor	
Strathcona	√							
Spirit River	√							
Taber			√	1 to 4	≥5, (a), (b), (c),(d)			(a), (b)
Vermillion River	√							
Vulcan (1/97 to 1/98)			√	1 to 4	5 and up			(e)
Vulcan (2/98 – 12/98)			√	1 to 4	5 and up			(e)
Wainwright	√							
Warner		√ (a)	√	1to4 (c), (d)	5 and up			
Westlock			√	1 to 4 (a)	5 and up (a)	30% and up (a)	Under 30% (a)	
Wheatland			√	1 to 3	4 and up			
Woodlands			√	1 to 4	5 and up	41% and up	Under 41%	

- Definitions (general) – (a)=by use-traditional; (b)=by zoning-agricultural; (c)=by general suitability.
- CLI (good) – (a)=at least 20 ac; (b)=at least 40 ac and is not fragmented; (c) 160 ac of dryland or 80 ac of irrigated land; (d)=Land having a CLI of 5to7 with permanent water rights; (e) land contained in an irrigable unit where the comment of the irrigaiton district indicates the unit should not be subdivided.
- CLI (poor) – (a)=cut off greater than 10 ac (CLI 1 to 4); (b)=40 ac (CLI 5to6) not viable farming; (c)=greater than or equal to 40 ac so badly fragmented it is not viable for farming; (d) portions of farmstead cannot be economically rehabilitated and returned to extensive agriculture.
- FAR (good) – (a) at least 20 ac
- Exclusions – (a)=10 ac cut-off and fragmented areas; (b)=20 ac; (c)=parcels of insufficient size for viable farming; (d)=land fragmented by physical constraints so land is not viable for farming; (e)=exclude any land, which by reason of size, shape, physical features, slope or surrounding land use may impair the ability of the land to be economically farmed.

Appendix C2 Interpretation of Policy Criteria in Appendix C1

Column	Criteria
County/MD	*Land Use Bylaw
Definition – General	(a) by use – traditional (b) by zoning – agricultural (c) by general suitability
CLI – Good	(a) at least 20 ac (b) at least 40 ac and is not fragmented (c) 160 ac of dryland or 80 ac of irrigated land (d) land having a CLI of 5 to 7 with permanent water rights
CLI – Poor	(a) cut-off greater than 10 ac (CLI 1 to 4) (b) 40 ac (CLI 5 and 6) not viable for farming (c) ≥ 40 ac which is so badly fragmented it is not viable for farming (d) Portions of farmstead cannot be economically rehabilitated and returned to extensive agriculture
FAR – Good	(a) at least 20 ac
Exclusions	(a) 10 ac cut-off and fragmented areas (b) 20 ac (c) Parcels of insufficient size for viable farming (d) Land fragmented by physical constraints (e) Exclude any land, which by reason of size, shape, physical features, slope and surrounding land use may impair the ability of land to be economically farmed

Appendix C3. Policies for Subdivision of First (and other) Parcel Out and Fragmented Land

County/MD	Farmstead/Developed Site (unsubdivided quarter)		Undeveloped Site		80 Acre Split		Maximum Non Ag Parcels (includes previous columns)		Fragmented Parcels	
	Policy	Criteria	Policy	Criteria	Policy	Criteria	All Soil	Better Soil	Policy	Criteria
Barrhead	Shall (a)	(g), (n), (p), (q), (r) (s)	May (a)	(a), (f), (k), (l), (j)			2 (a), (e), (f), (g), (h)	1, (b), (c), (d), (e), (a)	May	(a)
Beaver No. 9	May	(b), (o), (t)	May	(m)			1 (I)		May	(b)
Bighorn	May	(u)					4 (j)			
Bonnyville	Shall	(b), (c), (h), (g)	Shall (a)				1 (k), (b)		May	(i), (j), (k), (c)
Camrose	Shall	(b), (h), (o), (v), (w)	Shall (a)	(t)	May		1		May	(a), (c)
Clearwater	Shall	(t), (x), (g), (h), (b), (I) (A)	Shall (a)	(g), (s), (k), (b), (e)			1			
Cypress	May	(x), (h), (g), (b)								
Foothills							1			
Forty Mile	Shall	(h), (j), (b), (r)	Shall (a)	(g), (n), (b)			1			
Grande Prairie (1/97 - 3/98)	Shall	(h)	Shall	(h)			5 (n)		May	

Grande Prairie (7/98 – 12/98)	May	(l), (b)	May	(f), (a)			1	1	May	(i)
Lac Ste. Anne	May	(b), (y), (n)	May	(a), (f), (c)			2	1	May	(a), (j)
Leduc	Shall	(z), (B)	Shall (a)		Shall			1	May	(c), (j)
Lethbridge	May	(a), (x), (o), (b), (h)	May	(b), (h), (g)			2 (x)			
Minburn	May	(i), (g), (d), (C)	May				2 (d)			
Mountain-view										
Newell	May	(b), (n), (h), (g)	May(a)	(p), (q), (r)			1			
Peace	Shall	(b)	May(a)	(a), (b)	No		1		Shall	(a)
Pincher Creek	May	(b), (c)	May	(c)	May	(c), (d)	1 (a), (b)		May	(b), (c)
Ponoka	May (a)	(d), (e), (f)			May	(a)	1			
Provost	Shall	(b), (d)	Shall (a)	(a), (b)			1			
Red Deer*	May (a)	(b), (d), (g), (h), (l)	May		No/ May	(e)	1		May	(d)
Rockyview	May	(b), (h), (l), (j), (k), (I)	May(a)	(e), (g), (n), (u)			1		May	(e), (f)
St. Paul										
Starland	May	(F), (h),(b),(o),(d)	May	(a), (f), (b), (h), (g)			1 (m)			
Stettler	Shall	(c)	May(a)	(d), (e)			1		May	(a), (c)
Strathcona*	Shall	(b), (l)	May(a)		May	(a), (b)	1 (c)			
Spirit River	May		May	(y), (g)			2 (a)			

Taber	May (a)	(b), (m)	May				1 (c)			
Vermillion River	May (a)	(l)	May				1		Shall	(g)
Vulcan (1/97 to 1/98)	May	(D), (e), (h), (b), (a), (x)					1(o), 2(l)			
Vulcan (2/98 – 12/98)	May	(D), (e), (h), (b), (a), (x)					1(o), 2(l)			
Wainwright	May (a)	(l)	May				1		Shall	(g)
Warner	May	(b), (h), (a)	May	(d), (v), (g), (w)			2		Shall	(h)
Westlock	May (a)	(d), (g), (h), (o)	May(a)	(a), (f), (g), (h), (l)			2	1	May	(i)
Wheatland	Shall		May(a)							
Woodlands	Shall	(b), (g), (h), (l)	May	(f), (g), (j)			Max of 3	Max of 3		

Appendix C4. Interpretation of Policy Criteria in Appendix C3.

Column	Criteria
County/MD	*Agricultural Policy Area
Farmstead/Developed Site --Policy	(a) From previously subdivided quarter section
Farmstead/Developed Site	(a) Doesn't significantly affect irrigation systems in area
(unsubdivided) – Criteria	(b) To be kept to the smallest possible size parcel but still contains all buildings, structures and improvements
	(c) Parcel size not to exceed 10 ac
	(d) Not on better agricultural land
	(e) Approval only after residence has been lived in for 5 strait years
	(f) Will not be approved for subdivision for speculative purposes
	(g) Must not conflict with existing or future adjacent land uses
	(h) Conforms with access, sewage, facilities and development regulations
	(i) Must be redistricted
	(j) Conforms with Land Use District
	(k) Minimum of 4 ac
	(l) Minimum of 2 ac and maximum of 5 ac
	(m) Residual lot minimum 70 ac
	(n) Maximum of 10 ac
	(o) Max. of 3 ac, may exceed if extra land proven to be part of farmstead
	(p) Minimum parcel size of 1 ac
	(q) Can be on better agricultural land
	(r) Farmstead separation from an already unsubdivided quarter section may be approved based on relevant land use planning considerations and would require redesignation
	(s) Shall be considered a CR parcel to calculate parcel density
	(t) Not allowed if quarter is already subdivided (O.K.if fragmented land)
	(u) Not allowed in Ranchlands portion of MD
	(v) Agricultural parcels greater than 80 ac may be allowed if size is good for proposed use and will support a commercial ag enterprise
	(w) Setback of 15.2 m from top of bank of river, stream, and waterbodies
	(x) Building site has been in existence/suitable building site
	(y) Minimum of 3 ac and maximum of 10 ac
	(z) Parcel size must be big enough to farm or small enough to minimize loss of agricultural land
	(A) Minimum of 2.5 ac and maximum of 7 ac
	(B) Greater than 1 ha

Column	Criteria
	(C) Greater than 8 ac and less than 12 ac
	(D) Maximum of 5 ac
	(E) Minimum of 3 ac
	(F) Dwelling is habitable
Undeveloped Site - Policy	(a) Unsubdivided quarter section only
Undeveloped Site – Criteria	(a) Encouraged on poor agricultural land and/or land impractical to farm
	(b) Be kept to minimum size required for use
	(c) Lot must not exceed 3 ac and residual lot is at least 155 ac
	(d) Maximum size is 10 ac
	(e) Prior redesignation required
	(f) Must not negatively impact adjacent land uses
	(g) Proper access and building site provisions
	(h) Provide proper facilities (sewer, water, etc.)
	(i) Maximum of 3 ac but may exceed if extra land can be part of farmstead
	(j) Development of minor agricultural uses, commercial or industrial storage as secondary use may be allowed on larger Country Residential Parcels
	(k) Unsubdivided quarter section
	(l) Minimum of 0.5 ac and maximum of 3ac
	(m) Only one per quarter section (except for fragmented parcels)
	(n) Rest of quarter section should remain in agricultural use
	(o) Max. of 5 ac
	(p) An existing residence is located elsewhere on the quarter section
	(q) Owner has owned quarter section for a minimum of 5 years
	(r) Proposed site to be developed as new residence by owner
	(s) Min. of 2.5 ac and max. of 7 ac
	(t) Greater than 3 ac
	(u) Must be 300m away from any right of way highway
	(v) Residual parcel min. of 70 ac
	(w) Not affect any irrigation in the area
	(x) Can be farmstead and old farmstead with utilities
80 acre split – Criteria	(a) Must exclude any cultivated land (better ag land)
	(b) Suitable access required
	(c) Must be fragmented parcel
	(d) Original parcel contains a min. of 64.7 ac (160 ac)
	(e) Not look favorably
Maximum add'l non-Ag parcels – All Soil*	(a) Plus one fragmented parcel
***may exclude**	(b) Farmstead removal can be from 80 ac

Column	Criteria
better soil	
	(c) Can be from largest severed parcel
	(d) 2nd if farmstead is from a subdivided quarter section
	(e) Excluding public use development
	(f) One comm'l or ind'l instead of agricultural residential use allowed
	(g) Extensive agricultural parcels min. of 39.52 ac
	(h) May be increased through rezoning or amendment to Land Use Bylaw
	(i) Must be a fragmented parcel
	(j) Must be a small holding parcel
	(k) Greater than 3 ac
	(l) On irrigated land, two 80 ac lots may be recommended for approval instead of a 5 ac parcel
	(m) may be increased if all other provisions of the Bylaw are met
	(n) on poorer agricultural land
	(o) on dryland

Appendix C5. Land Use Policies in Municipal Development Plans and Land Use Bylaws that Identify Agriculture as a Primary Activity

County/MD	Identify Areas Where Agriculture Is The Primary Activity				MDP Policy To Conserve Agricultural Land		
	No. of LUB Ag. Districts	MDP Map	MDP Policy	Consult Alberta Ag.	Silent	Policy - Ag. Lands	Policy - Better Lands
Barrhead	1	Future Land Use	Specific			Maintain agricultural land base.	Limit other uses.
Beaver	1		General			Conserved for most part, for agriculture.	
Bighorn	1	Land Use Concept	Specific			Ranching uses to dominate.	
Bonnyville	2		Specific			Conserve for agricultural uses.	
Camrose	1		General				Maintain for agricultural uses.
Clearwater	2		Specific			Protect all districted agricultural lands.	
Cypress	3		General			Discourage incompatible uses.	Protect better agricultural land.
Forty Mile	1		General			Minimize fragmentation.	
Foothills	1		General			Strive to preserve for agricultural purposes.	
Grand Prairie	2	Future Land Use	Specific			Agricultural uses have preference.	
Lac Ste. Anne	1	Future Land Use	Specific			Encourage to maintain for agriculture.	Encourage away from.
Leduc	2	Land Use Concept	Specific			Conserve extensive areas for agriculture.	Minimize amount removed from agriculture.

County/MD	Identify Areas Where Agriculture Is The Primary Activity				MDP Policy To Conserve Agricultural Land		
	No. of LUB Ag. Districts	MDP Map	MDP Policy	Consult Alberta Ag.	Silent	Policy - Ag. Lands	Policy - Better Lands
Lethbridge	2		General			Prime use is agriculture.	
Minburn	2		General				Strive to conserve for agriculture.
Mountain View	3		General			Safeguard agricultural land base.	
Newell	1					Conversion to non-agriculture avoided where possible.	
Peace	3		General			Protect	Shall discourage removal.
Pincher Creek	1	District Map	Specific			Ensure continued agricultural viability.	
Ponoka	2		Specific			Will wherever possible be reserved.	Limit certain uses.
Provost	1		General			Conserve where possible; limit loss.	Limit loss.
Red Deer	2	Land Use Concept	Specific			Preserve where permitted.	Preserve where possible.
Rocky View	4		General			Preserve	
Stettler	2		Specific			Encouraged	Special consideration for conservation.
St. Paul	1		General			Retain as much as possible.	
Strathcona	2	Policy Districts	Specific			Conserve where possible.	
Taber	2		General			Agricultural uses will be primary.	
Vermilion River	1	Future Land Use	Specific			Leadership in conservation.	Non-agricultural use discouraged.
Wainwright	1	Future Land Use	Specific			Leadership in conservation.	Non-agricultural use discouraged.

County/MD	Identify Areas Where Agriculture Is The Primary Activity				MDP Policy To Conserve Agricultural Land		
	No. of LUB Ag. Districts	**MDP Map**	**MDP Policy**	**Consult Alberta Ag.**	**Silent**	**Policy - Ag. Lands**	**Policy - Better Lands**
Warner	1		General			Prime use is agriculture.	
Westlock	2	Agricultural Areas	Specific			Preserve large blocks of land.	Encourage use for agriculture.
Wheatland	1		General			Protect agricultural land base.	Should be retained for agriculture.
Woodlands	2		General			Protect existing agricultural areas.	Limit other uses.

Appendix C6 Policy components in MDPs and LUBs directing non-agricultural land uses to minimize impact on agricultural areas and operations

County/MD	Non-Agricultural Development Direction					Intensive Operation Protection		
	To Non-Ag. Areas	To Poorer Soils	Within Ag. Areas	Focus	ILO Setback	Reciprocal Setback[a]	Designate As ILO District	Other Ag. District Listing
Barrhead		Encouraged	Flexibility where appropriate	Land	Should	Shall	No	Discretionary
Beaver		Encouraged	Allow for flexibility	Land uses	Shall consider	Shall be discretionary	No	Discretionary
Bighorn	To specified areas.		Few intrusions	Rural lifestyle	Shall	Silent	No	Discretionary
Bonnyville	To predominant non-agricultural areas.		Some uses	Land/operations	Shall	Shall	No	Discretionary
Camrose		Encouraged	Some uses	Better lands	Shall	Shall	No	Permitted
Clearwater		Should be directed	Some uses	Land/Uses	Shall	Shall	Yes	
Cypress		To low capability dry agricultural lands	Some uses	Land/Uses	Supports	May	No	Discretionary
Forty Mile		To low capability lands	Some uses	Land/Uses	Supports	May	No	Discretionary
Foothills		Directed to lands of limited potential	Some uses	Land/uses	Should	Silent	No	Discretionary
Grand Prairie		Directed to poorer soils	Recognize competing uses will occur.	Land/uses	Direct away from (no MDS)	Not allowed to infringe (no MDS)	No	Discretionary
Lac Ste. Anne		Directed to poorer soils	Some uses	Land/uses	Shall	Shall	No	Permitted
Leduc		Some uses encouraged	Some uses	Land/uses	Will be used as	Silent	No	Discretionary

County/MD	Non-Agricultural Development Direction					Intensive Operation Protection		
	To Non-Ag. Areas	To Poorer Soils	Within Ag. Areas	Focus	ILO Setback	Reciprocal Setback[a]	Designate As ILO District	Other Ag. District Listing
					guidelines.			
Lethbridge	Direct to most suitable areas.	Some Uses	Some flexibility	Land/uses	shall	shall	No	Discretionary
Minburn		Encourage to be directed to poorer lands	Some uses	Land/uses	Shall	Shall	No	Discretionary
Mountain View		Guide to low potential areas	Some flexibility	Land/uses	Silent	Implied	Yes	
Newell		Should direct to poorer lands	Some uses	Land/uses	Shall	Shall	No	Discretionary
Peace		Shall encourage	Allow for flexibility	Land/Uses	Silent	Silent	No	Discretionary
Pincher Creek	Certain areas	Not always	Some uses	Uses	Shall to the extent possible	MDS assessment considered	No	Discretionary
Ponoka			Some uses	Land/options	Shall	Shall	No	Discretionary
Provost	Direct where possible		Some uses	Land	Silent	Silent	No	Discretionary
Red Deer		Encourage	Some uses.	Land/options	Shall	Shall	No	Discretionary
Rocky View	Being concentrated subdivision and designation areas		Discourage but some uses	Land/options	Should	Should	No	Discretionary
Stettler		Encourage	May be permitted	Land/Uses	Shall	Shall	No	Discretionary
St. Paul			Limit other uses	Agricultural Development	Shall but retain flexibility	Implied	No	Discretionary
Strathcona	Established		Some uses	Land/operations	Shall	Shall	No	Discretionary

County/MD	Non-Agricultural Development Direction					Intensive Operation Protection		
	To Non-Ag. Areas	To Poorer Soils	Within Ag. Areas	Focus	ILO Setback	Reciprocal Setback[a]	Designate As ILO District	Other Ag. District Listing
	policy districts							
Taber		Make effort to ensure where possible	Some uses	Land/Uses	Shall take into consideration	Shall take into consideration	No	Discretionary
Vermilion River		Wherever possible	Some uses	Land/Uses	Shall	Shall	No	Discretionary
Wainwright		Wherever possible	Some uses	Land/Uses	May/Shall(a)	Shall	No	Discretionary
Warner	Direct to most suitable areas		Some uses	land	shall	shall	No	Discretionary
Westlock		Direct uses to poor lands	Some uses	Land/Uses	Shall consider	Shall consider	No	Discretionary
Wheatland			Allow for flexibility	Land/Uses	Shall	Silent	No	Discretionary
Woodlands		Encouraged	Some uses	Land/Uses	Shall	shall	No	Discretionary

(a) may in general ag areas, shall be within 2.4km of urban, group CR or community uses.